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ABSTRACT

This product development report is one of 21 such reports, each dealing with the developmental history of a recent educational product. The product discussed in this report is the Hawaii English Program, which focuses on the English language as a set of skills, a system of communication, and a medium of art. The grade level for which this product is designed is K-12, with all students capable of learning in typical school settings being the target population. The description of the product and its origins are presented. Product development is then discussed from the standpoints of Management and Organization, Original Development Plan, Modifications of Original Development Plan, and Actual Procedures for Development of Product. Summative evaluations are given for 1969-70 and 1970-71. Diffusion of the program and its adoption are discussed. The future of the product is suggested. Critical decisions made during the five-year developmental history of the program are described. References are provided. Two appendixes present a Summary of Selected Formative Evaluation Studies and a List of Products and Developers. (DB)

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HAWAII ENGLISH PROGRAM

Developed By The Hawaii State Department of Education and The University of Hawaii

November, 1971

Contract No. OEC-0-70-4892

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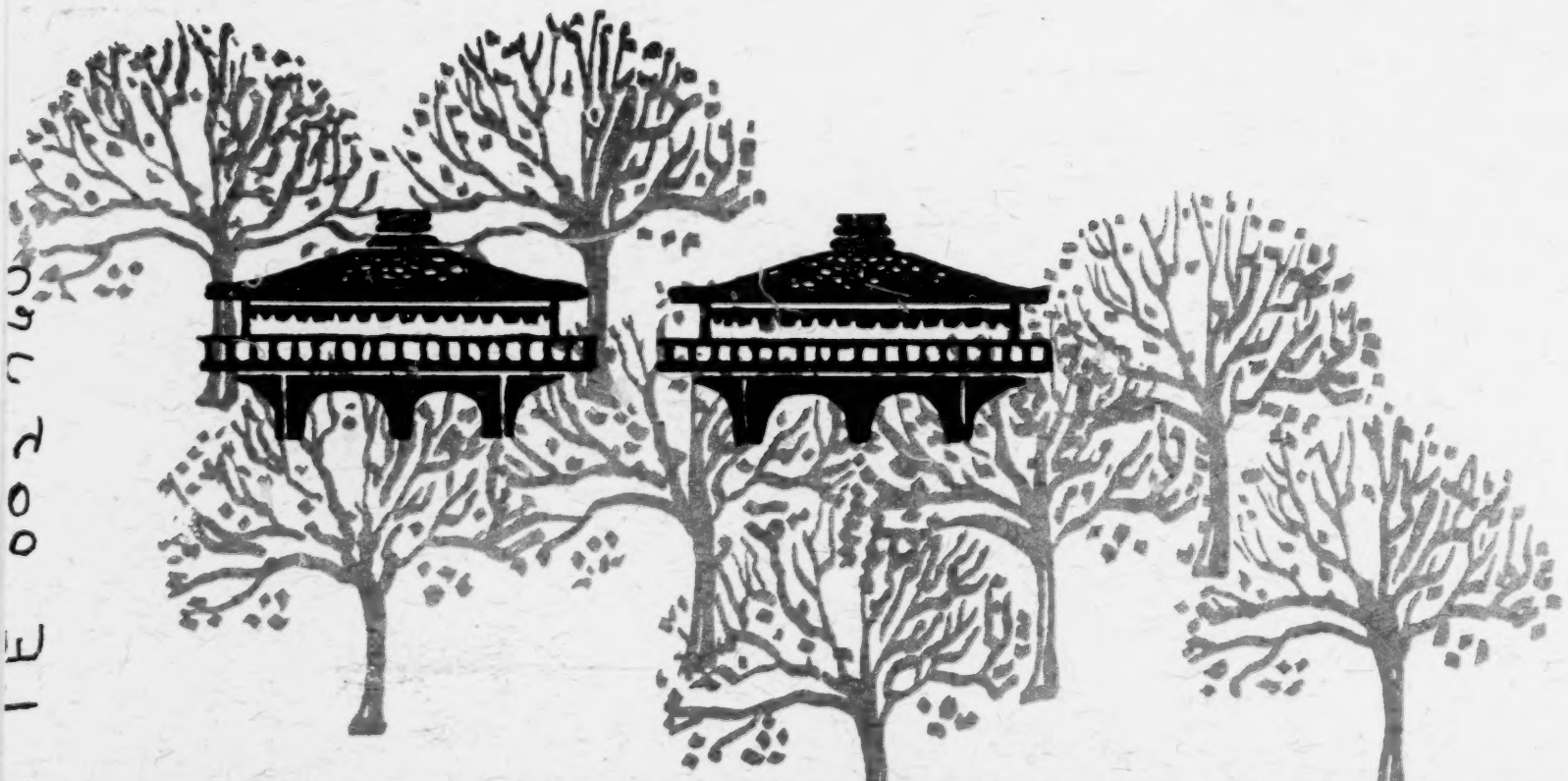

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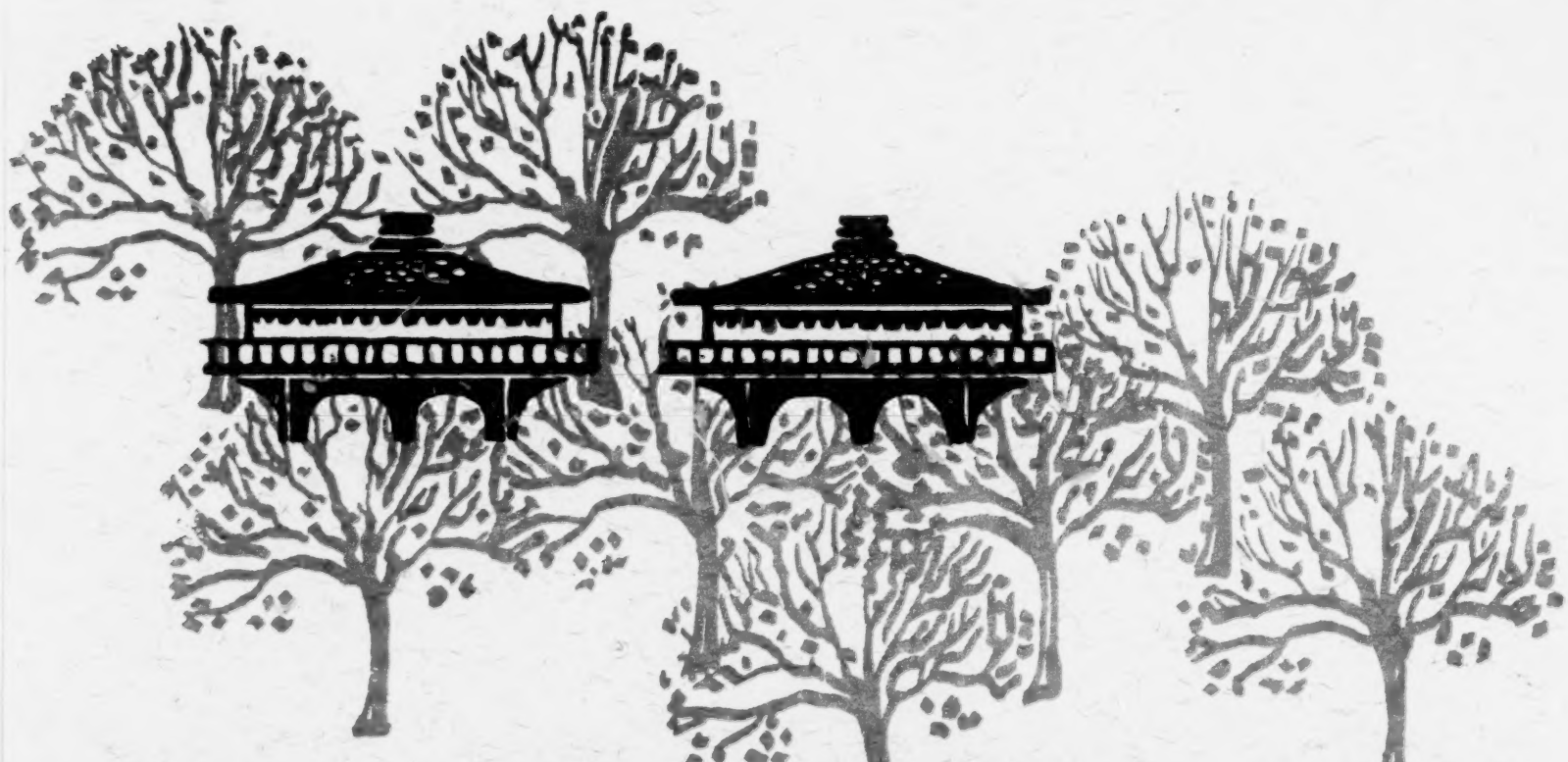

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HAWAII ENGLISH PROGRAM

DEVELOPED BY THE HAWAII STATE DEPARTMENT
OF EDUCATION AND THE UNIVERSITY OF HAWAII

Daniel W. Kratochvil
Jack J. Crawford

TE 002 760

American Institutes for Research
in the Behavioral Sciences

Palo Alto, California

November, 1971

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Office of Program Planning and Evaluation

PREFACE

This product development report is one of 21 such reports, each dealing with the developmental history of a recent educational product. A list of the 21 products, and the agencies responsible for their development, is contained in Appendix B to this report. The study, of which this report is a component, was supported by U.S. Office of Education Contract No. OEC-0-70-4892, entitled "The Evaluation of the Impact of Educational Research and Development Products." The overall project was designed to examine the process of development of "successful educational products."

This report represents a relatively unique attempt to document what occurred in the development of a recent educational product that appears to have potential impact. The report is based upon published materials, documents in the files of the developing agency, and interviews with staff who were involved in the development of the product. A draft of each study was reviewed by the developer's staff. Generally, their suggestions for revisions were incorporated into the text; however, complete responsibility for interpretations concerning any facet of development, evaluation, and diffusion rests with the authors of this report.

Although awareness of the full impact of the study requires reading both the individual product development reports and the separate final report, each study may be read individually. For a quick overview of essential events in the product history, the reader is referred to those sections of the report containing the flow chart and the critical decision record.

The final report contains: a complete discussion of the procedures and the selection criteria used to identify exemplary educational products; generalizations drawn from the 21 product development case studies; a comparison of these generalizations with hypotheses currently existing in the literature regarding the processes of innovation and change; and the identification of some proposed data sources through which the U.S. Office of Education could monitor the impact of developing products. The final report also includes a detailed outline of the search procedures and the information sought for each case report.

Permanent project staff consisted of Calvin E. Wright, Principal Investigator; Jack J. Crawford, Project Director; Daniel W. Kratochvil, Research Scientist; and Carolyn A. Morrow, Administrative Assistant. In addition, other staff who assisted in the preparation of individual product reports are identified on the appropriate title pages. The Project Monitor was Dr. Alice Y. Scates of the USOE Office of Program Planning and Evaluation.

Sincere gratitude is extended to those overburdened staff members of the 21 product development studies who courteously and freely gave their time so that we might present a detailed and relatively accurate picture of the events in the development of some exemplary educational research and development products. If we have chronicled a just and moderately complete account of the birth of these products and the hard work that spawned them, credit lies with those staff members of each product development team who ransacked memory and files to recreate history.

TABLE OF CONTENTS

PREFACE ii

LIST OF FIGURES v

PRODUCT DESCRIPTION

Product Characteristics 1

Rationale for Product 2

Description of Materials 6

Procedures for Using Product 15

ORIGINS

Key Personnel 19

Sources of Ideas for Product 20

Evolution of Ideas for Product 22

Funding for Product Development 27

PRODUCT DEVELOPMENT

Management and Organization 28

Original Development Plan 32

Modifications of Original Development Plan 33

Actual Procedures for Development of Product 36

SUMMATIVE EVALUATION

Evaluation Staff 39

1969-70 Summative Evaluation 39

1970-71 Summative Evaluation 46

DIFFUSION

Agency Participation 49

Diffusion Strategy and Efforts 49

Product Characteristics and Diffusion 50

ADOPTION

Extent of Product Use 52

Installation Procedures 52

Information From Users 53

FUTURE OF THE PRODUCT 53

CRITICAL DECISIONS 54

REFERENCES 63

APPENDIX A: SUMMARY OF SELECTED FORMATIVE EVALUATION STUDIES . . . 64

APPENDIX B: LIST OF PRODUCTS AND DEVELOPERS 75

LIST OF FIGURES

Figure 1. Design of Language Skills System, K-6 8

Figure 2. Design of Language Systems Program, Grades 4-12 9

Figure 3. Design of the Literature Program, Grades K-12 11

Figure 4. Major Event Flow Chart 23

Figure 5. Cycles of Materials Development 34

PRODUCT DESCRIPTION

Product Characteristics

Name

Hawaii English Program.

Developer

The Hawaii State Department of Education, in cooperation with the University of Hawaii.

Distributor

To date, no commercial distributor has been selected for the Hawaii English Program. The varied formats and the extensiveness of the materials have delayed arriving at final agreements with a publisher. The Hawaii State Department of Education presently is publishing and disseminating completed portions of the program throughout the state of Hawaii. A search continues for a commercial publisher: (1) to assist in publishing the Hawaii English Program materials for the state of Hawaii; and (2) to advise on the final form of the materials and specifications to produce a commercially feasible product.

Focus

The primary focus of the Hawaii English Program is on the English language as a set of skills, as a system of communication, and as a medium of art.

Grade Level

K-12.

Target Population

The Hawaii English Program is planned for all students capable of learning in typical school settings. While the program contains some elements particularly relevant to students in Hawaii (i.e., elements designed for the geographic, demographic and ethnic background of Hawaii), the program has been targeted for national dissemination.

Rationale for Product

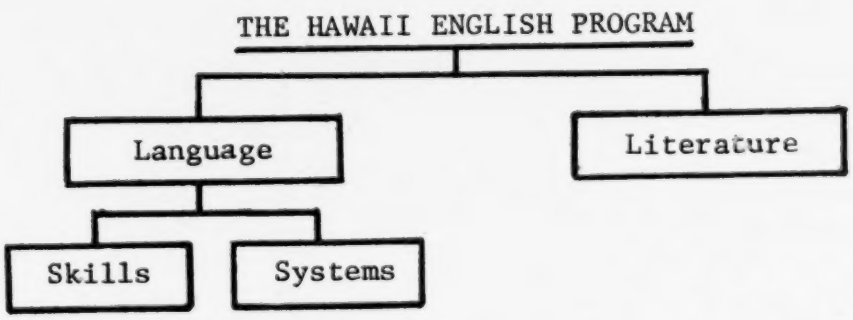
Long Range Goals of Product

The K-6 program has been completed and is now being installed in increments throughout the state of Hawaii. The 7-12 portion of the program was initiated and then deferred until a tangible K-6 product was visible. The development of the 7-12 program is now under way. Its installation within the state of Hawaii is planned for 1976. The Board of Education for the state of Hawaii has adopted the Hawaii English Program as the official language arts curriculum for the public schools of Hawaii; thus, the rate of current installation in Hawaii depends primarily on legislative funding.

The first effort toward out-of-state dissemination is already under way. Several school districts in Santa Clara County, California, have formed a consortium to modify elements of the program and to begin using it this fall (1971) in selected schools. A similar consortium has been formed by Guam, American Somoa, and the Trust Territory. Thus, the long range goals are (1) statewide installation and (2) national and even international use.

Objectives of Product

The Hawaii English Program consists of two major areas, Language and Literature. The program attempts to engage students in the study of the English language in three different ways: (1) through the acquisition of proficiency in communication skills; (2) through the study of the structure of language as a system; and (3) through involvement in the artistic uses of language. The following is a diagrammic representation of the curriculum at the program and sub-program levels.



Language Skills Sub-Program. The Skills Sub-Program is a performance curriculum in which the fundamental goal is referred to as "synthesized

language control," i.e., the combined mastery of listening, speaking, reading, and writing skills. The overall goal is to help each child progress from his own entry level to a stage of independent learning. Specific goals for the Skills Program have been established within and across two basic areas: listening and reading skills contributing to a receptive repertory, and oral and writing skills contributing to a productive repertory. The goals of these sub-programs have been broken down into more specific objectives. For example, for the element, "word recognition," the objective is: to name on sight regularly patterned words in any order.

Language Systems Sub-Program. This sub-program was designed to give the student insight into the creative nature of language behavior and the grammatical rules such behavior presupposes. Another general aim was to provide perspectives on the variety of, and change in, language behavior through time and across cultures. The developers assert that the primary goal of this program is not to make the student into a skilled practitioner, but rather to help him learn something about himself and others. Their second goal was to present the student with factual information about language in general, and English in particular. The third goal was to provide some understanding of the discipline of linguistics. The fourth goal was to affect language skills. These general goals are transposed into more specific objectives for each division of the program. The specific objectives of each of the courses and units in the program are of several different kinds and at several levels of abstraction. Cognitive, linguistic, and behavioral goals are stated for each unit, often explicitly but sometimes quite broadly. For example, for the unit element, "perspectives in communication-advertising," the objective is: to clarify the ways the ad writers exploit grammatical and lexical resources of language as attention-getting devices.

Literature Sub-Program. The developers' primary concern with the Literature Sub-Program at the elementary level was to involve children with individual literary works in order to give them opportunities to enjoy, interpret, and understand literature. Its activities take children into various forms of verbal and non-verbal communication--modes which the planners felt best implement the humanistic goals of literature. Many of the goals of the literature sub-program have been broken down into more specific

objectives. For example, for the element, "perception and language," the objective is: to identify, in poetry, rhyme and rhythm patterns, figurative language, repetition and variation. Some goals are less behaviorally stated. For example, the element "growing up" has the objective: to identify with characters and sense the tone of works which reflect your own life or an understandable contrast.

Philosophy Behind Product

The general philosophy behind the Hawaii English Program is suggested by the following characteristics which the developers attempted to embody in the program:

1. Individualized instruction through a range of learning tools, activities and organizational and management arrangements.
2. Precise statements of instructional objectives and techniques of evaluating achievement.
3. Systematic emphasis upon peer teaching.
4. Learning in a setting of communication; the child is continually placed in a communication situation requiring interaction.
5. Emphasis upon inductive and discovery approaches to learning.
6. Activity-centered learning in the form of games, simulations, creative drama, improvisations, writing, and other creative activities.
7. Use of non-textual modes of educational presentation. Books are still an important part of the curriculum, but pervasive reliance on the textbooks has been replaced by a wide use of multi-modal presentations.
8. Encouragement of pluralistic responses to student questions. Conjecture, speculation, open-endedness, tentative answers, alternatives, and even ambiguity are encouraged.

Theories Supporting Product

Notions of curricular practice advanced by King and Brownell (1966), Bruner (1960, 1962, 1966), Schwab (1962, 1966), and Phenix (1964a, 1964b) governed the development of the program. Research in language and linguistics, cognition, and learning theory by Chomsky (1957, 1965), Piaget (1959), Lenneburg (1964), Ausubel (1963), Skinner (1968), and Purves (1968) were also influential.

Language Skills Sub-Program. The developers pointed out that several unique assumptions were incorporated into the development of the Language Skills Sub-Program. First, it was assumed that people achieve better when they know quite precisely what it is they are to achieve and how their attempts are to be judged. Second, the program assumes that in an educa-tionally responsive environment, the child is a decision maker. Third, a major assumption involves the concept of systems. The entire program consti-tutes a system in which there is a constant and dynamic interplay among the elements that make up the system.

Language Systems Sub-Program. The Language Systems Sub-Program is based on Chomsky's theory of language and a Brunerian view of learning. The developers assumed that a speaker of a language has constructed a power-ful theory of that language which, without his awareness of how it works or even that it exists, enables him to generate and understand an infinite number of sentences in his language. On the basis of the Brunerian view of learning, it was assumed that each discipline is based on "organizing ideas" (such as set in mathematics or abstract grammatical rules in linguistics) and that these ideas offer the most promising points of encounter for students.

Literature Sub-Program. When discussing the role of theories in support-ing the Literature Sub-Program, the developers explained that the Literature Program grew out of a theory of literature as art, not only in the traditional sense of belonging to that group of studies labelled "humanistic," but more particularly in the processes and methods used in putting poems, stories, and plays together. Literature, like all art, is a symbolic form. It is a way of knowing and thus must be experienced. Its particular medium is lan-guage; it is a language construct which renders human experience concrete

through various manipulations of language, such as character, setting, plot, image, metaphor, analogy. A second assumption that grew naturally from the first is that response to the work is central. It was assumed that children can be engaged in both literary works and in the processes of literature in ways to lead them to discover their responses and the sources of their responses and to become increasingly articulate about their discoveries.

Description of Materials

Organization and Content of Materials

In general, the Hawaii English Program curriculum is arranged to be neither grade- or age-bound, nor tracked for fast, average, and slow. The various sub-programs within the curriculum and the units within each sub-program can be made to fit a conventional grade organization. The modular design allows flexibility and accommodation to different patterns of school organization.

As previously noted, there are three major sub-programs: Language Skills, Language Systems, and Literature. Since these sub-programs were designed as parts of a comprehensive curriculum, the developers feel that they would be most effective when used as a total program. However, each major strand and many sub-parts of the three sub-programs can be used independently.

Language Skills Sub-Program. The Language Skills Sub-Program was designed as a network of interconnected subsystems allowing different entry and exit points for different children. Each of four subsystems--aural, oral, reading, and writing--has its own network and flow chart of learning activities; but each has specified interconnections with the other three subsystems as well. For example, a child failing in letter recognition in the early stages of learning to read has the option of moving to a second mode within the reading subsystem or of shifting to the Typewriting Program. He may learn to recognize letters on the typewriter keyboard. In short, there are various paths of progression available to desired goals.

The materials of this sub-program are grouped into two skills areas: skills with the oral symbols of language and skills with the graphic symbols. These areas are further subdivided into receptive and productive aspects.

The receptive aspect of skills with the oral symbols of language includes listening and comprehension; the productive aspect includes expressive speech, song and communication. The receptive aspect of skills with the graphic symbols of language includes reading; the productive aspect includes handwriting and typewriting with communicative purposes. These areas are related and the subdivisions exist primarily for practical organizational purposes.

The organization of units in the Language Skills Sub-Program is shown on the following page. It should be noted that the Skills system is designed to carry the child to what is generally acknowledged as sixth grade achievement levels.

Language Systems Sub-Program. The Language Systems Sub-Program comprises three unit groups: elementary for grades 4-6, intermediate for grades 7-9, and high school for grades 10-12. Development of the latter two, as previously mentioned, was deferred but is now under way. The distinction between the unit groups is characterized by the developers as analogous to the three stages of mental growth in Whitehead's The Aims of Education and Other Essays (1959). The elementary program is the "stage of romance" of the discipline; it deals with topics of proven appeal to young students. The topics are not normally considered central to linguistics, but they deal with aspects of communication systems leading toward key characteristics of language systems. The intermediate program is the "stage of precision." Here the student encounters the central problems and concerns of the discipline of linguistics. The high school program represents the "stage of generalization." Here the student is concerned with synthesis as he investigates those areas of linguistics which lap over into other disciplines.

The subject matter of this program is presented as a series of tasks, moving from more tangible and structured to less tangible and less structured. Generally speaking, each unit and activities within the units move from the concrete to the abstract, from structured to open-ended, from basic to optional activities. Class organization for these activities moves from whole class, to small groups, to individuals.

Unit titles and the organization of the Language Systems Sub-Program are shown on page 9.

Figure 1

Design of Language Skills System

K-6

SKILLS WITH ORAL SYMBOLS

Listening and Speaking

- Phonology
  - Sounds of English
  - Intonation
  - Stress
- Vocabulary
  - Colors & Shapes
  - Prepositions
  - Affixes
  - Multiple Meanings
- Grammar
  - Plurals
  - Determiners
  - Grammar 1 & 2
    - Verbs
    - Pronouns
    - Questions
    - Negatives
    - Possessives
    - Phrases
    - Word Differences
  - Grammatical Flexibility
- Language Variations
  - Dialect Variations
  - Style Variations
- Task Oriented Communication
- Task Oriented Group Discussion
- Meaningful Communication
  - Songs

SKILLS WITH GRAPHIC SYMBOLS

Reading

- Graphic Symbols Discrimination
  - Letters
  - Words
- Graphic Symbols Recognition
  - Letters
  - Numbers
  - Words
  - Phrases & Sentences
  - Audio Card Books
  - BRS Satellite Kit
- Purposeful Reading
  - Instructional Library
  - Dialect Books
  - Speeded Reading
  - SRA IIA Kit
  - Audience Reading
  - Coordinated Language Skills
  - Reference Skills
- Taped Books

Writing

- Handwriting
  - Letter Discrimination
  - Letter Recognition
  - Cursive Writing
  - Manuscript Writing
- Purposeful Writing
- Spelling
- Capitalization
- Punctuation
- Typewriting
  - Typing Skills
  - Applied Typing

Figure 2

Design of Language Systems Program

Grades 4-12

ELEMENTARY PROGRAM 4-6
PERSPECTIVES IN COMMUNICATION
Non-Sequential 3-Week Study Units

Advertising
Animal Communication
Background of English
Dialects
Gestures
International Language
Names
Popular Songs
Propaganda
Secret Codes
Sign Language
Social Uses of English
Sounds
Symbol Systems
Writing Systems

INTERMEDIATE PROGRAM 7-9
PERSPECTIVES IN LANGUAGE
Sequential 4-Week Study Units

(Secondary development began 9/1/71 and design is now under way)

7th Grade	8th Grade	9th Grade
Language Families	Words	Creativity
Historical Development & Vocab.	Syntax	Abstractness
Phonology	Transformations	Children's Language
Semantics	Pidgin	Exotic & Artificial Languages

SENIOR HIGH PROGRAM 10-12
PERSPECTIVES IN LANGUAGE AND CULTURE
Non-Sequential Elective Semester Units

(Under review)

Language and Anthropology
Language and Literature
Language and Mathematics
Language and Philosophy
Language and Psychology
Language and Sociology

Literature Sub-Program. The developers felt that literature has no inherent sequence; i.e., it is not essential to understanding and enjoying stories, plays and poems that they be read in some chronological, generic or other order. Hence, there was no logical sequence imposed in the selections other than to move from simpler to more complex works and topics. The formal examination of types of literature, historical developments, national literature, and literary criticism as such are reserved for the forthcoming high school units.

The structure of the program is contained in six "bands" roughly related to grade level. There are overlaps in the difficulty and interest levels from band to band. Broad ranges of difficulty within each band were included to accommodate the range of student differences. The major divisions of each band are called elements. Each element is subdivided into a number of components. The component affords manageability and gives direction to the choice of books and the writing of lesson materials. The selections chosen for each component are arranged in contexts which are groupings of stories, poems, nonfiction pieces, or songs. The groupings are designed to highlight concepts, comparisons, or themes.

The organization of bands and elements of the Literature Sub-Program is shown on pages 11 and 12.

Format of Materials

Language Skills Sub-Program. For Skills Sub-Program (grades K-6) the various individual units are assembled into 13 packages. There are seven basic packages, one for each grade level K-6, and six supplemental packages which, when added to any basic package, would make up an instructional package appropriate for a combined group, such as K-1, K-1-2, and so on.

The developers of this program have attempted to reach the student through a variety of modes--audio, visual and/or tactile devices. The chief modes include:

1. A stack mode: A series of punched cards attached by means of a rod to a base with learning materials programmed into the stack in a way to permit two or more children to work together (primarily visual).

Figure 3

Design of the Literature Program

Grades K-12

ELEMENTARY PROGRAM K-6
Non-Sequential 2-4 Week Units

BAND I (K-2)	BAND II (3-4)	BAND III (5-6)
MAKE BELIEVE:		
Magic & Wonder	Magic & Wonder	Magic & Wonder
Fabulous Creatures	Fabulous Creatures	Bigger Than Life
	Little People	Little People
	Wishful Thinking	
THE WORLD AROUND US:		
Rhythms of Nature	Rhythms of Nature	Rhythms of Nature
Rhythms of Art	Rhythms of Art	Rhythms of Art
Rhythms of Man	Rhythms of Man	Rhythms of Man
GROWING UP:		
Imagining Things	Imagining Things	Imagining Things
Self and Family	Self and Family	Insights
	Insights	Self and Others
THE SOCIAL ORDER:		
Animal People	Animal People	Heroic Deeds
Heroes and Leaders	Heroes and Leaders	Acquiring Wisdom
ADVENTURE:		
Narrow Escapes	Narrow Escapes	Searches
		Encounters
PERCEPTION & LANGUAGE:		
Rhythms & Patterns	Denotation and	Denotation and
Images	Connotation	Connotation
	Rhythms & Patterns	Images
	Images	Rhythms & Patterns
LITERATURE LISTENING PROGRAM		

Figure 3 (Continued)

Design of the Literature Program

Grades K-12

(Presently being developed)

INTERMEDIATE PROGRAM 7-9
Non-Sequential 3-6 Week Units
Grouped Under These Elements

The Oral Tradition	Experiencing the World of Poetry
The Legendary Hero	Self
The Author in his Natural World	Patterning of Fictive and Language Elements
Exploring the Ridiculous	Perception & Language

(Presently being developed)

SENIOR HIGH PROGRAM 10-12
Non-Sequential Elective Semester Units

Reading and Writing Literature

- Converting the World to Language
- Forms of Experience
- Perspective and Voice
- Convention and Revolt

Literature and the Outside World

- Literature and Psychology
- Literature and Culture
- Literature and Science as Metaphors of Experience
- Private and Public Arts
- The Writer as Critic of Society
- Literature and Politics
- Literature and Revolution

2. A language master mode: An audio card-reading device which records and/or plays back sound (primarily audio but also visual).
3. A film mode: A continuous-loop motion picture in a cartridge, with or without a sound track.
4. A book mode (visual).
5. A typewriter mode (primarily visual, also tactile).
6. A paper and/or pencil mode (primarily visual).
7. A flocked card mode: A card with letters or numerals in raised or textured material (primarily tactile, visual).
8. A tape recorder mode: A tape recorder adapted for use with cassettes (audio).
9. A phonograph and disc mode (audio).
10. A game mode: Varied devices, such as latto or playing cards, to carry out a task-oriented, competitive or self-evaluative activity.

A detailed instructional manual for the teacher accompanies the program and contains explanations of: conceptual framework, learning environment, various sub-programs, learner goals for each element, entry and exit behaviors, learning procedures, next steps, and record keeping.

Language Systems Sub-Program. The materials for this program are packaged into 16 more or less self-contained modules, or units, each built around a central problem. Each unit has a complete kit box. Included in each unit are: (1) the teacher's manual; (2) the student handbook, which contains the general textual material that students will use during the course; (3) the activity book, which includes exercises, puzzles, writing tasks, and suggestions for creative activities; (4) games, which bear a major part of the actual instruction of the unit; (5) a classroom research library containing single or multiple copies of trade books related to the subject, reference texts, specially prepared abridgements of technical articles, and anthologies of materials such as poems, cartoons, maps, charts,

and original technical articles; (6) sundry audiovisual materials such as bulletin board displays, tapes, slides, records, film loops, and filmstrips; and (7) evaluation materials. A limited number of equipment items are also part of the package.

Literature Sub-Program. The materials for this program are packaged into more or less self-contained units by component groupings. With the exception of two films, all essential books and supportive materials are packaged in each component. Each component has a teacher's guide which includes an overview, a listing by context of materials provided in the set and those to be provided by the teacher, a listing by content of selections, and lesson materials (activities and teaching procedures).

Literature works form the backbone of this program. The works are selected from standard sources, e.g., from the lists of the classics in children's literature. Stories and poems range in setting literally from the North to the South Pole; from Hawaii, Japan, China, Korea, the Philippines, Portugal, Europe, Africa, and North and South America. Included in the selections at all levels are nonfiction works selected for literary quality and interest to students. In addition to books, the curriculum uses games, puzzles, illustrated poems, storytelling cards, tapes, natural objects, and creative drama lessons.

Cost of Materials to User

Installation, which includes the procurement of materials, equipment, and teacher training and support, for the K-6 part of the Hawaii English Program is estimated to cost $100/student to install the first year and $25/student per year amortized over the subsequent five years. Thus, for the entire state of Hawaii with its 100,000 students in K-6, it will cost $10 million for initial installation and $2.5 million per year to maintain. This can be compared with the $10 per student per year subsequently being alloted for Language Arts in the state of Hawaii. Thus far, the state of Hawaii has provided over $3.5 million for installation. For school year 1970-71 (Phase I of installation), the installation budget for K-1 Language Skills and Literature was $1.5 million. For school year 1971-72 (Phase II), $.5 million was appropriated for maintaining those children already in the program and $1.5 million for expansion of Language Skills

and Literature to new K-1 classes and for Language Systems to grades 4-6. Installation costs for the 7-12 part of the program should equal about one-half the amount spent for installation of the K-6 part of the program; that is, about $50/student to install the first year and about $12.50/student per year amortized over the subsequent five years.

Procedures for Using Product

Learner Activities

The Hawaii English Program incorporates in its sub-programs various ways of accommodating student individualities. There is a range of learning tools and activities to choose from and a learning environment which makes self-choice possible and feasible. Built into the sub-programs are opportunities for self-direction, self-instruction, and self-evaluation. All three sub-programs, in different ways, use an inductive style of learning and rely more heavily on learning activities (i.e. making and doing in many modes and media) other than the reading of textbooks. Although the variety of learning modes may give an impression of randomness, objectives and criteria for evaluating achievement are built into the materials of all three sub-programs.

Language Skills Sub-Program. The Language Skills "bank" of resources lets children make their own mix of activities using various media, including spindled card stacks, flocked alphabet cards, listening machines, film loop projectors, phonographs, and typewriters. Each child selects a task and the activities through which he will attack it. As he moves ahead, he records his accomplishments with stickers in his private folder. Peer teaching is especially emphasized in this program. It is used to induce children into accepting responsibility for their own learning and also for the learning of other children.

Language Systems Sub-Program. Each unit, about three weeks in duration, follows a basic pattern. A dialogue (usually taped and accompanied by visuals) introduces the key questions that guide the activities of the unit. Then members of the class undertake inquiries and discussions. After the class completes a collaborative inquiry into a topic, the children have a choice of activities designed to lead into discovery. Working alone, in

pairs, or in small groups, they conduct research, make collections, perform experiments, invent and play language games, construct sound or symbol systems, make dictionaries, investigate codes, or write commercials and radio plays.

Literature Sub-Program. Many activity modes were developed to convey experientially the nature of literature. Among these are creative drama; listening to works read by the teacher, by other students, or on tape; and composing activities, both written and oral.

Teacher Activities

Teacher strategy. In Language Skills, the teacher is supposed to guide children in selecting and planning their activities, to diagnose their readiness to start new tasks, to review and analyze student-kept records of progress, and to maintain a master record. In Language Systems, when children set about their projects, the teacher's role is intended to be that of consultant, resource person, partner in inquiry, and model for learning. In Literature, the developers view the teacher as "the catalyst who releases the 'chemistry' of response, the stimulator who helps children to express it, and the gentle prover who helps them to discern its reasons." Thus, the training program attempts to train the teacher to view the student not simply as a person undergoing a course of preparation, but also as a person in the process of living and growing as an individual. Obviously, the best teachers have always been all these things and more. The Hawaii English Program was designed to make it possible for more teachers to be this way.

Teacher training. There are two classes of people to be trained: supervisory, including installation teachers, district coordinators, and school principals; and classroom teachers (called participating teachers). Each district, plus Molokai, has one coordinator (8 all told). Installation teacher positions were allocated on the basis of one to every 6-8 classrooms, for a current total of 43. The training programs have reached well over 1,200 classroom teachers. The English Project staff designs and conducts the 7-week summer institutes for the supervisory staff, mainly the installation teachers and the district coordinators. The supervisory staff in each district then, with the help of the project staff, trains the classroom

teachers in the district. The training is done through district workshops of 72 hours' duration covering Language Skills and Literature. Installation teachers and the district coordinators are trained in a two-week institute for Language Systems. These people then conduct a 32-hour district workshop in Language Systems for classroom teachers. Both the supervisory group and the classroom teacher group have returned a second summer for updating on new developments in the Hawaii English Program. In effect then, all supervisors and teachers in the installation phase have had two levels of training.

Out-of-class preparation. Most out-of-class preparation is eliminated since the essential materials for instruction are provided. Furthermore, a good part of the traditional daily lesson plans are not required, as they are provided in the materials.

Allocation of Time to English

Time allocations have been suggested for grades K-6. Since development at higher levels has only begun, no time allocations have been suggested. For grades K-6 the time allocations have been suggested as follows:

In grades K-2: 120 minutes daily for Skills and up to 60 minutes for Literature (a total of up to 3 hours daily)

In grade 3: A transitional year in which there is a reduction of time for Skills (60 to 90 minutes for Skills) and an expected increase for Literature (up to 60 minutes)

In grades 4-6: 60 minutes for Literature, 60 minutes for Systems (2 hours) but with time given for Skills instruction for any student who has not yet attained 6th grade achievement levels in all five areas. This time might be 30 minutes daily or even an hour if necessary. Actual decisions are administrative.

Provisions for Parent/Community Involvement

An extensive program of parent/community orientation has been conducted. The individual schools have taken the initiative in setting up information and get-to-know-HEP meetings. A year-round visitation program is currently

conducted in many districts. Parents have been involved as evaluation data collectors. A brochure on the program specifically for parents and lay people was developed. No other provisions for parent/community involvement are built into the program.

Special Physical Facilities or Equipment

Special equipment going beyond what is conventionally accepted as standard equipment for classrooms is required for the Hawaii English Program. There are audio card readers, film loop projectors, cassette recorders, electric typewriters, a specially constructed housing for projector and screen, etc. Also, the classroom must be set up physically to allow for learning stations, floor space for creative drama, etc. The room must be wired to carry the equipment load.

Recommended Assessment Techniques for Users

In the Hawaii English Program, specific objectives and criteria for evaluating achievement are built into the materials.

Language Skills Sub-Program. A progression of objectives and criteria is programmed into the activities in such a manner that accomplishment of one task gives the go-ahead for undertaking the next. The task of evaluation becomes essentially one of recording the programs the student has completed. Furthermore, each student maintains his own record of progress. A semi-pictorial record book enables even a newly entered kindergartener to monitor his own progress. The student can ascertain what programs he has completed, what programs he is currently working on, and what programs are not related to his goals. The teacher examines the student's record book or her class record sheet (a compilation of individual records) to ascertain where the student stands. There are also provisions for evaluating certain behaviors which are central to independent study--does the child plan his activities for the language arts period, does he tutor other children--these and other behaviors indicate whether the child is growing in his ability to study and learn on his own.

Language Systems Sub-Program. Each unit carried its own evaluation plan and evaluation materials. The principal device to assess student gains is the Preview-Review Questionnaire, essentially a pre- and posttest designed

to measure the students' knowledge of the topic prior to and after exposure to the unit. There are in addition a number of devices to appraise student reactions to the units, such as a set of five faces that occur at the end of each worksheet in some activity books. The expressions on the faces range from delight to chagrin, and the student circles, checks, or colors the face most closely related to his feelings about the activity. In some of the units a questionnaire asks the student for his opinion on specific aspects of the unit.

Literature Sub-Program. Evaluation is approached from several directions in formal and informal ways, both during and following the teaching of a unit; there is no single measure. Evaluation materials provided in the program are a Classroom Record form, a Report to Parents form, and a Context Response form. The first is used to record the student's progress through the various parts of the program. The Report to Parents form provides a checklist for student growth in the areas of response and performance which are consistent with the goals of the program. This checklist is based on teacher judgment. The Context Response form allows the student to indicate his response, either negative or positive, to the stories, poems, and activities which he encounters. Informal measures built into the lesson materials include puzzles and games which require particular understandings in order for the child to compete or to play; drama, which calls for interpretation; and original stories, paintings, drawings, and other art work, which may reveal unexpected responses and understandings.

ORIGINS

Key Personnel

A number of personnel who were directly involved in the Hawaii English Program played a key role in its development. Dr. Arthur R. King, Jr., a specialist in curriculum research and development was the Co-Director of the Hawaii Curriculum Center and Co-Director of the Hawaii English Project. Dr. William G. Savard was Assistant Superintendent for Research, Hawaii State Department of Education as well as Co-Director of the Hawaii Curriculum Center. Mrs. Shiho S. Nunes, also one of the founding members and formerly

State Program Specialist for English, was Associate Director of the Center and Project Manager of the Hawaii English Project. Dr. John A. Brownell, presently Deputy Chancellor of the East-West Center, was Associate Director for Plans and Evaluation. Gladys Koo and Ernest Cherry, experienced school administrators in the Hawaii Public Schools, held positions of Assistant Directors of the Hawaii Curriculum Center for University of Hawaii Affairs and Department of Education Affairs, respectively.

The major designers of the three sub-programs of the Hawaii English Program were recruited and selected by the founders of the Hawaii Curriculum Center. These key designers were: Dr. Gerald Dykstra, Language Skills Program; Dr. Theodore Rodgers, Language Systems Program; and Mrs. Florence Maney, Literature Program. As of August 31, 1971, with the exception of Mrs. Maney who plans to retire in December, all of the above mentioned individuals are no longer directly involved in the development of the Hawaii English Program. They have left the project and taken other positions.

Dr. Shinkichi Shimabukuro, Director of the Curriculum Development and Technology Branch, Office of Instructional Services, Department of Education, is presently the chief administrator of the Hawaii English Project. Other personnel, such as Dr. Richard Ando, Chairman, Hawaii State Board of Education; Dr. Lowell D. Jackson and Ralph H. Kiyosaki, former Superintendents of the Department of Education; Dr. Hubert V. Everly, Dean, College of Education, University of Hawaii; and Dr. Arthur F. Mann, former Assistant Superintendent of Instructional Services, Department of Education, played a less direct, but critical, role by providing administrative support and direction.

Sources of Ideas for Product

Since the conferences on "Basic Issues in the Teaching of English" in 1958, national concern with the teaching of English continued to grow. Two reports (in Nunes, 1967) issued by the National Council of Teachers of English (The National Interest and the Teaching of English and The National Interest and the Continuing Education of Teachers of English) identified the principal concerns with the state of English instruction in the schools and served to focus action for reform. The establishment by the U.S. Office of Education of Project English and other study centers, the extension of National Defense

Education Act support to English and reading, and the Commission on English Institutes were national responses to the identified critical needs.

In Hawaii, similar concerns with local problems and needs were expressed. For a long time English had been the target of public dissatisfaction with the schools. Concerned lay people and professionals from all walks of life in Hawaii were asking: Why can't our students speak better? Why are so many failing to learn to read? Why can't they write? Why are their tastes in literature so low? Where does the responsibility lie for these failures? What can be done?

While the teaching of English had been the object of greatest concern in Hawaii, it had also been the most favored in allocations of staff, school time, and other resources. In 1958 a remedial reading program was established statewide. It was followed in 1960 by the Lay Reader Program to bolster the teaching of composition in the secondary schools by the use of paraprofessional teacher aides. In 1962 thirty-two language arts resource teacher positions were established to provide direct help to schools. Added soon after were extra teacher positions, most of them for strengthening the teaching of basic language skills. In 1964 the Legislature approved seven district language curriculum specialist positions to augment the state supervisory staff of three specialists. Indeed, English was receiving special attention.

In 1965 the Board of Education put three questions to the State Department of Education: (1) How effective are instructional programs in the schools? (2) How adequate is teaching? (3) Is there equality of educational opportunity throughout the state?

The answers to these questions were contained in a series of curriculum survey reports, which consisted of qualitative judgments of programs and teaching by subject and curriculum specialists from both the University of Hawaii and the school systems. This was the state of Hawaii's most thoroughgoing needs assessment attempted thus far, the verdict was a need for change, particularly for English language arts instruction. In 1965 the Governor's Conference on Educational Change also highlighted the need for major school reform. Again in 1965, there was published the Stiles Report (Preparation of Teachers and Other Educational Personnel in Hawaii: A Study Authorized

by the Third Legislature, State of Hawaii, Study Committee Report No. 1, in Nunes, 1967), which called for a shift in the function of the College's Laboratory Schools from teacher training to educational research, experimentation, and development. Joining the college staff at that time was a curriculum theorist, Dr. Arthur R. King, Jr., who was looking for a means to put his theories to work. He was given the task of reshaping the direction and purpose of the Laboratory Schools. Perhaps most important from the enabling standpoint, 1965 saw the enactment of ESEA which, under various titles, began to pour federal funds into the states.

The ingredients for a yeasty mix were present: the needs assessment pointed the direction and the focus; people with theorizing capability were on the ground; the purpose and facilities existed at the University Laboratory Schools; the school system was primed for change; the Board of Education was in support; and funds were available. In 1966 a joint activity of the Department and University, under the name of the Hawaii Curriculum Center was established. The focus of the planning grant under Title III was on the "communicative arts," including the English language, foreign languages, and the arts. Projects were begun in all these areas--English was the major one.

These, roughly, were the perinatal conditions for the Hawaii English Program. There was no clean sequence of a single cause-effect development. A number of separate developments fortuitously came together: events, trends and people, with federal funds and federal concern as the major catalyst.

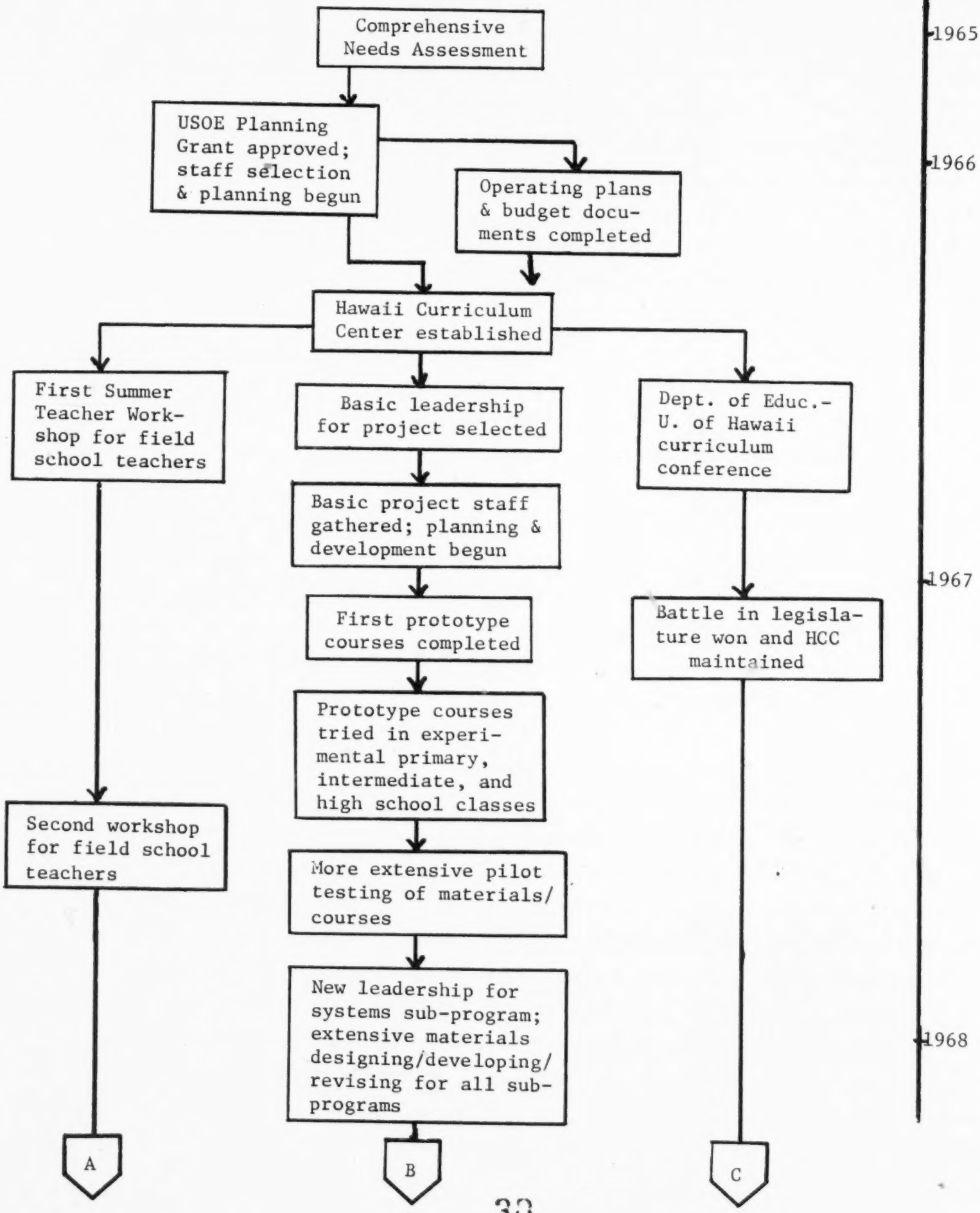
These first major events, and subsequent major events, during phases of development, evaluation and diffusion are noted on the Major Event Flow Chart in Figure 4.

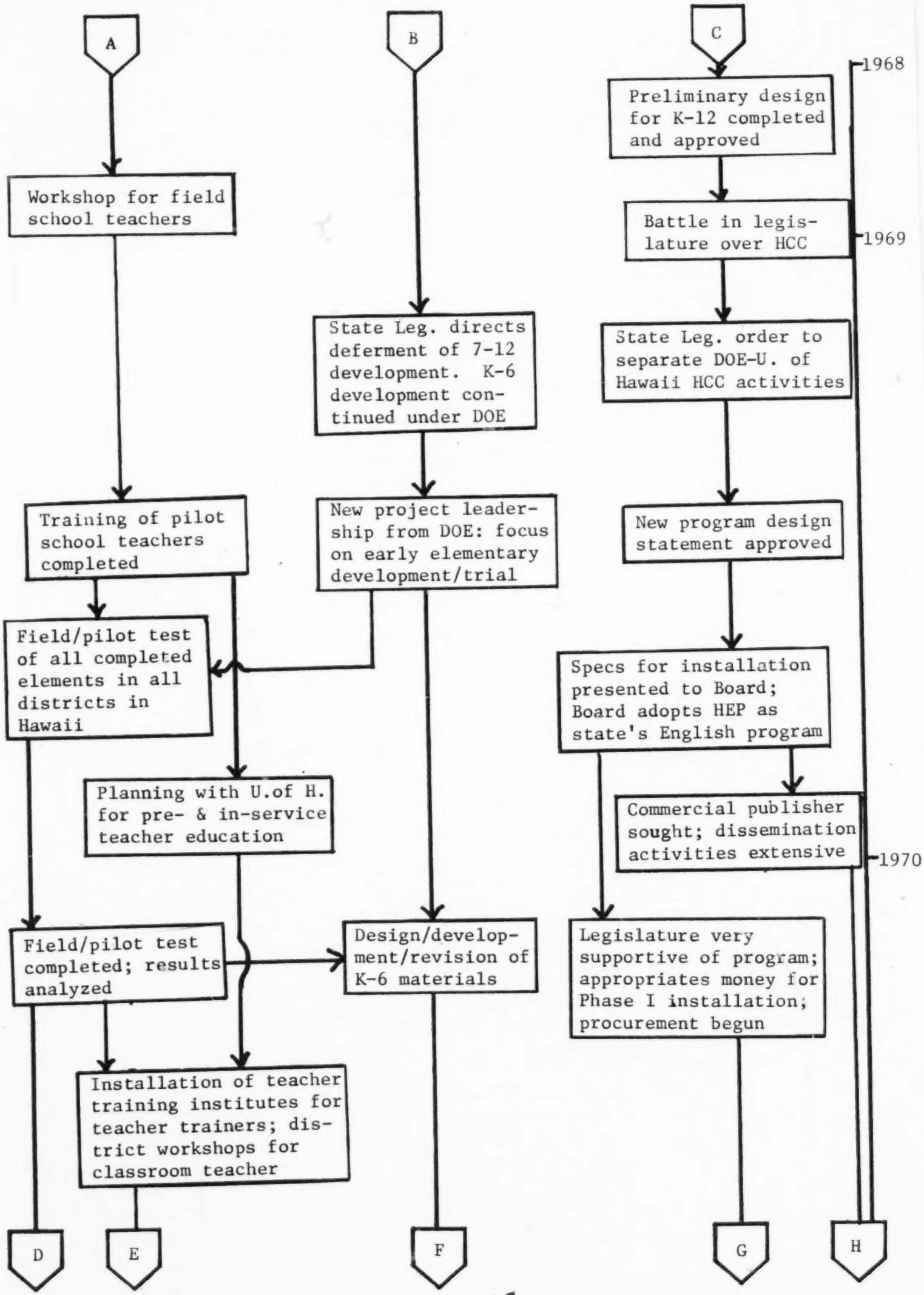
Evolution of Ideas for Product

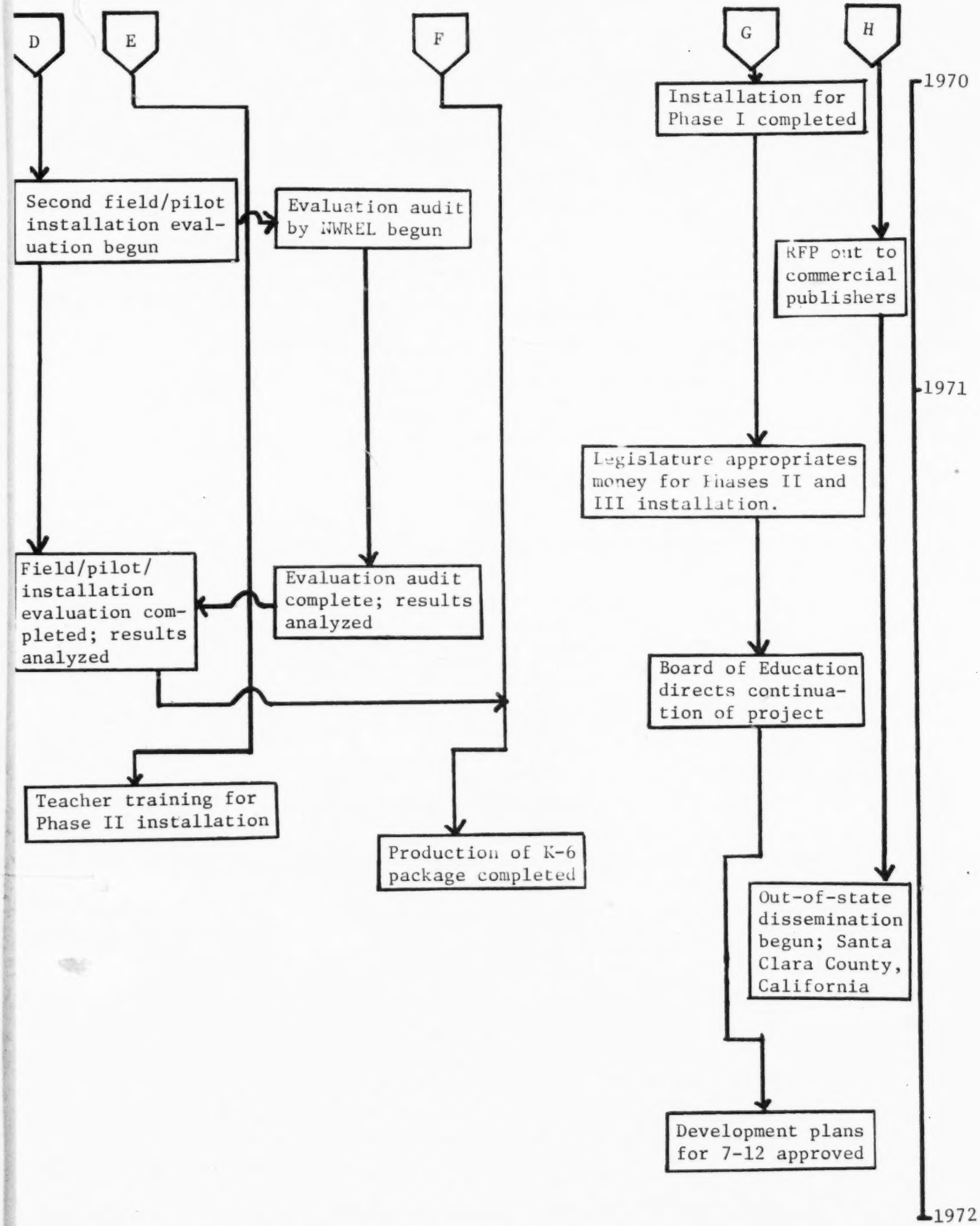
The Board of Education, on the basis of the 1965 Survey, recognized the need for and were prepared to be supportive of curriculum development in English. Title III funds were available for such development. Interested and able personnel to do the development were either available or could be contacted on the basis of previous consulting work for the Hawaii State Department of Education. School personnel were primed to be responsive. Almost everything pointed toward the development of a new English curriculum for Hawaii.

Figure 4

Major Event Flow Chart


Comprehensive Needs Assessment
USOE Planning Grant approved; staff selection & planning begun
Operating plans & budget documents completed
Hawaii Curriculum Center established
First Summer Teacher Workshop for field school teachers
Basic leadership for project selected
Dept. of Educ.-U. of Hawaii curriculum conference
Basic project staff gathered; planning & development begun
First prototype courses completed
Battle in legislature won and HCC maintained
Prototype courses tried in experimental primary, intermediate, and high school classes
Second workshop for field school teachers
More extensive pilot testing of materials/courses
New leadership for systems sub-program; extensive materials designing/developing/revising for all sub-programs
A
B
C
1965
1966
1967
1968


A
B
C
1968
Preliminary design for K-12 completed and approved
Workshop for field school teachers
Battle in legislature over HCC
1969
State Leg. directs deferment of 7-12 development. K-6 development continued under DOE
State Leg. order to separate DOE-U. of Hawaii HCC activities
Training of pilot school teachers completed
New project leadership from DOE: focus on early elementary development/trial
New program design statement approved
Field/pilot test of all completed elements in all districts in Hawaii
Specs for installation presented to Board; Board adopts HEP as state's English program
Planning with U.of H. for pre- & in-service teacher education
Commercial publisher sought; dissemination activities extensive
1970
Field/pilot test completed; results analyzed
Design/development/revision of K-6 materials
Legislature very supportive of program; appropriates money for Phase I installation; procurement begun
Installation of teacher training institutes for teacher trainers; district workshops for classroom teacher
D
E
F
G
H


D
E
F
G
H
1970
Installation for Phase I completed
Second field/pilot installation evaluation begun
Evaluation audit by NWREL begun
RFP out to commercial publishers
1971
Legislature appropriates money for Phases II and III installation.
Field/pilot/ installation evaluation completed; results analyzed
Evaluation audit complete; results analyzed
Board of Education directs continuation of project
Teacher training for Phase II installation
Production of K-6 package completed
Out-of-state dissemination begun; Santa Clara County, California
Development plans for 7-12 approved
1972

The Hawaii English Project was established in May of 1966 as the major developmental project of the Hawaii Curriculum Center, a newly established joint activity of the Department of Education and the University of Hawaii. The survey findings, evaluated in the light of scholarship in the field of English, theories of learning and instruction, and emerging curricula from national study centers, led to a decision to design a new English curriculum. The charge to the English Project was to develop an "exemplary tested curriculum" and to plan for its dissemination to the schools. The target date of fall 1971 was set for the completion of the project, with materials to be made school-ready within two years following completion of the development phase.

The English Project planning teams undertook to provide some solutions for the persistent problems of language instruction by way of a systems approach. They were charged with accounting for the following aspects in a program designed for maximum language growth for all children in the schools:

1. The state's policy that man's capacity for language (for utilitarian, aesthetic, and educational purposes) be enhanced to the fullest degree.
2. A clear definition of the field of English, including the language itself, its use in speaking and writing, and its creative shaping into literature.
3. A carefully sequenced plan for a curriculum in which new knowledge builds upon what has gone before and repetition is reduced.
4. A set of learning materials for students so designed that each child's individuality is respected to the highest degree possible and his individual progress is not inhibited.
5. Guides for teachers using the materials.
6. Classroom equipment and organizational arrangements to be used with the materials.
7. Evaluation instruments for assessing students' progress and monitoring their school experience, including reporting to parents.
8. A teacher training program and suggested materials for the program.
9. A plan for the installation of the program in the schools, including cost factors, training schedules, and other administrative plans.

The principal activity resulting from these changes to HEP has been the production and testing of instructional materials. In addition, the project conducted a number of collateral activities, among them: (1) the training of supervisors, coordinators, resource teachers, and classroom teachers; (2) the demonstration, testing, and evaluation of published programs which might be incorporated into the Hawaii curriculum; (3) the design of new university course offerings in language and literature; (4) participation in reconstituting the university's pre-service program for teachers of English; (5) consultation services to the schools; and (6) participation in the State Department of Education's planning, programming, and budgeting (PPB) for the statewide English program, and planning and installing annual increments of the program, both statewide and out-of-state.

Funding for Product Development

During the years prior to 1966, when money was first appropriated to the state for innovative and exemplary projects, there had been a great variety of studies and surveys subsumable under the rubric of "needs assessments." The overwhelming consensus emerging from these studies was that the most critical educational need throughout the state of Hawaii was to upgrade the language arts curriculum. After a survey of educational needs within the state had been conducted, the State Board of Education decided to put funds from Title III of the Elementary and Secondary Education Act into the Hawaii English Project. An analysis of this turning point is included under the Major Decisions section of this report. Appropriations of funds from state monies were made annually, with accompanying legislative struggles.

Breakdown of Funds

The K-6 portion of the Hawaii English Program has been approximately a $5 million project, with $1 million expended per year from 1966 through mid-1971. Project developers have estimated that the 7-12 portion of the program, deferred until completion of the K-6 portion in 1971, would cost approximately one-half as much, or roughly $2.5 million to develop.

For the K-6 part of the program the funds can be viewed in terms of source, personnel vs. materials, and development vs. evaluation. Records

from the developers indicate the breakdown of funds in percent of total development costs are as follows:

	Percent of Total
1. Funds by Source	
Funds from Title III, ESEA, Federal Government	53%
Funds from state of Hawaii education funds	47%
2. Funds for Personnel and Materials	
Amount spent for personnel	80%
Amount spent for materials, etc.	20%
3. Funds for Development and Evaluation	
Amount spent for development	85%
Amount spent for evaluation	15%

At this time, it is not possible to estimate similar apportionment of funds for the 7-12 portion of the Hawaii English Program.

PRODUCT DEVELOPMENT

Management and Organization

The Hawaii English Project was originally the major developmental project of the Hawaii Curriculum Center. In May of 1966, the Center was established as a joint activity of the Hawaii State Department of Education and the University of Hawaii. Historically, the Center was an outgrowth of long-standing activity by the University and the Department of Education, working for the most part independently, to improve instructional programs and practices in classrooms throughout the state. More directly, in 1966 it represented a convergence of several significant developments in Hawaiian education which were reflections of trends evident nationally. Some of these trends were: (a) the growing recognition of the essential role of education in modern Hawaiian society; (b) the increasing demand for quality in the face of rising educational costs; (c) the greater collaboration of University scholars and Department of Education personnel on curriculum problems; (d) the new role of service sought for the University of Hawaii's Laboratory Schools; and (e) the large-scale curriculum development needed in English.

The Center was established to serve the state of Hawaii as the primary center for large-scale design and development in selected areas of the curriculum and for demonstration and evaluation of local, national and international curricula. Its secondary purpose was that of providing a site for research on curriculum problems and of stimulating and supporting curriculum-related activities throughout the state.

The idea of merging the resources of the parent organizations received impetus in March of 1966, when formal planning for the Center began. The proposal for a Center as a joint activity, with participation by private and parochial schools and by cultural agencies of the community, was approved by the Board of Education and the Board of Regents in May. An operational grant for the Center under Title III of P.L. 89-10 followed in August, 1966.

There were two major divisions of the Center. The Project Division carried the principal responsibility for design, development and evaluation of curricula and the planning for their dissemination. The programmatic work was divided into discrete projects, each headed by a manager, staffed with planners according to the scope of the work, and counseled by an advisory committee of experts. Each project was funded for a specified life span, and its progress was monitored by a planning and evaluation unit.

The other division, the Laboratory School Division, had the primary function of exemplifying curricula developed elsewhere and of providing an arena for the initial testing of project materials. It had the secondary function of developing small-scale curriculum projects that could later be expanded into full-scale efforts.

To systematize the planning and monitoring of projects and to facilitate the work of planners and teachers, several support services were established. The Planning and Evaluation Services were at the center of all activities; this unit guided the assessment of all aspects of the Center's operations, in particular the development of evaluation plans and materials. Other services included: reference and search services, media development, editing, filming, graphic arts, multilith and photographic reproduction.

Directing the operations of the Center was a Directorate of seven; three pairs of directors representing the parent organizations and one providing liaison with the Department's Office of Instructional Services. The Directorate made basic policy decisions, planned general strategy, oversaw evaluations

and sought financing. Associate directors and assistant directors were responsible for general planning and evaluation, project management, financial management and administration of the Laboratory Schools. A Council of Community Advisors and a Council of Educational Advisors made recommendations to the Directorate and the Directorate in turn was responsible to an Executive Committee composed of the Superintendent of Education, the President of the University and the Dean of the College of Education. This committee represented the legal sponsoring bodies--the Board of Regents of the University and the State Board of Education.

The University's contribution to the Center included the assignment to the Center of all personnel, plant, and operating budget of what was formerly the University Laboratory Schools. Also, University scholars from the College of Arts and Sciences and from the College of Education worked regularly on Center projects and advised the Laboratory School faculties. The services of researchers, evaluation specialists, a director, and an associate director for the Center were provided by the Educational Research and Development Center of the College of Education.

The Hawaii State Department of Education contributed the full amount of its allotment of federal funds under Title III and the services of top administrative personnel. In addition, it subsidized the inservice training, dissemination activities, extra personnel, equipment, and materials needed for field location schools. Another contribution was the participation of the districts and individual schools in the trial and evaluation of new curricula.

From May, 1966, to April, 1969, this was the general nature of the management and organizational structure in which the Hawaii English Program was being developed. Internally, the project appeared to function well. Staff morale was high; the climate was one of creative accomplishment. However, the new amalgamation of University and State Department of Education carried destructive seeds. In April of 1969, the Hawaii State Legislature ordered a major reorganization of the Hawaii Curriculum Center. The forces leading to this turning point and its consequences are discussed in the Major Decisions section of this report.

In carrying out its mandate, the Board of Education placed all Hawaii Curriculum Center functions and activities funded by ESEA, Title III, and

Department of Education general funds under the direction of a newly organized Curriculum Development and Technology Branch of the Office of Instructional Services. Concurrently, the University assigned its portion of the Center to the newly formed Curriculum Research and Development Group within the College of Education. Essentially, this separation gave sole responsibility of the Hawaii English Project to the State Department of Education and the University of Hawaii retained control over smaller curriculum efforts. The general status of the Hawaii English Project was thus lowered. The Executive Committee and the Directorate of the Hawaii Curriculum Center were eliminated. The Hawaii English Program became one of several projects administered under the Curriculum Development and Technology Branch of the Office of Instructional Services. The smaller science and art/music projects were moved to the University of Hawaii Curriculum Research and Development group. The Hawaii Curriculum Center as a unique and joint effort of the Department of Education and the University of Hawaii ceased to exist.

This separation obviously led to some critical changes in key personnel. Dr. King, Co-Director, returned to his former position as head of the University R & D group. Dr. Savard joined the University group, and Mrs. Koo moved into the College of Education administration. Mrs. Nunes, Project Manager, remained for two years to complete the elementary development, then joined the University. Dr. Dykstra and Dr. Rodgers also remained for two years to complete the elementary development, then took positions with the University. In July, 1969, Dr. Shimabukuro assumed the directorship of the newly created Curriculum Development and Technology Branch of the Office of Instructional Services, becoming at the same time director of the Hawaii English Project. There were, however, no changes in the role of the chief planners of the three sub-programs of the Hawaii English Program at this time.

The Joint Interim Committee on Education acknowledged that curriculum research and development was of mutual concern to the Department of Education and the University of Hawaii. It, therefore, requested that the two departments draft a statement of agreement on the future conduct of curriculum research and development. They did formulate an agreement which established a basis for coordination and cooperation in all instructional improvement

and curriculum research and development efforts between the University and the Department of Education. While this was a gesture designed to heal some of the wounds and to replace the earlier arrangement, it is generally acknowledged that the erstwhile staff esprit and unified purpose felt in the early days of HEP have never been regained.

Original Development Plan

Objectives and Description of Expected Product

The Hawaii English Project addressed the following question: What can be done about the language problem in our schools? In exploring the issue, the question expanded: How can the English program for the state of Hawaii, kindergarten to grade 12, be designed to reflect a coherent theory of English, yet accommodate a curriculum theory in harmony with varying views of the field? Other questions, which implied objectives and suggested the general description of the expected product, naturally followed. How can comtemporary conceptions of the discipline of English be brought into the curriculum? How can all the needed support elements of materials, equipment, properly trained teachers, school organization, administration and supervision be planned and provided for? And most importantly, how can design, production, and all needed supportive elements be brought to bear in the classroom so that each child increases his power over language and enlarges the knowledge, experience, pleasure and choice that this power makes possible? These questions, once identified, served as the starting point for design specifications.

Planned Procedures for Product Development/Evaluation

The planned procedures for the Hawaii English Program must be viewed in terms of how the Hawaii Curriculum Center was organized to work. The Center was to carry on its work within a statement of explicit theory about the task to be done. Theory was to provide the planners with well-defined courses of action and the means by which to assess results; it was to be self-correcting and self-governing in that it would provide for continued appraisal and revision of the very principles it would establish. The Center took the position that what would be sound in theory would be sound in practice; if it were not, then the theory must be unsound or some element

had been misunderstood or omitted. Thus, what would be deficient in practice would be deficient in theory, also.

A theory of operations based on a systems approach was to govern the curriculum development work of the Center. To them, "systems approach" emphasized rigorous analysis of operations and time dimensions and made provision for self-correction of the system and its sub-systems. It was a way of using a given set of resources to produce a system capable of attaining a given set of objectives within a given period of time. Applied to the curriculum development process, a systems approach meant that a curriculum must be designed as a package, a unitary whole. Goals must be explicit; designs must reflect not only goals but the latest knowledge. All elements needed to achieve the goals must be accounted for: the teacher and student materials, the evaluation procedures, the teacher competencies, the school organizational and administrative patterns, the logistical support, the use of time and space. Finally, evaluation instruments must measure achievement of stated goals. In short, organizationally and operationally a systems approach meant that every part of the curriculum development organization must relate itself and its work to every other part of the structure.

On the basis of the systems approach, the curriculum development process itself was to be a trial-and-revision cycle which would allow for continual evaluation of the work in progress. Figure 5 on page 34 depicts the cycles of materials development. Reinforcing the systems approach of the Center was to be a Program Evaluation and Review Technique, or PERT.

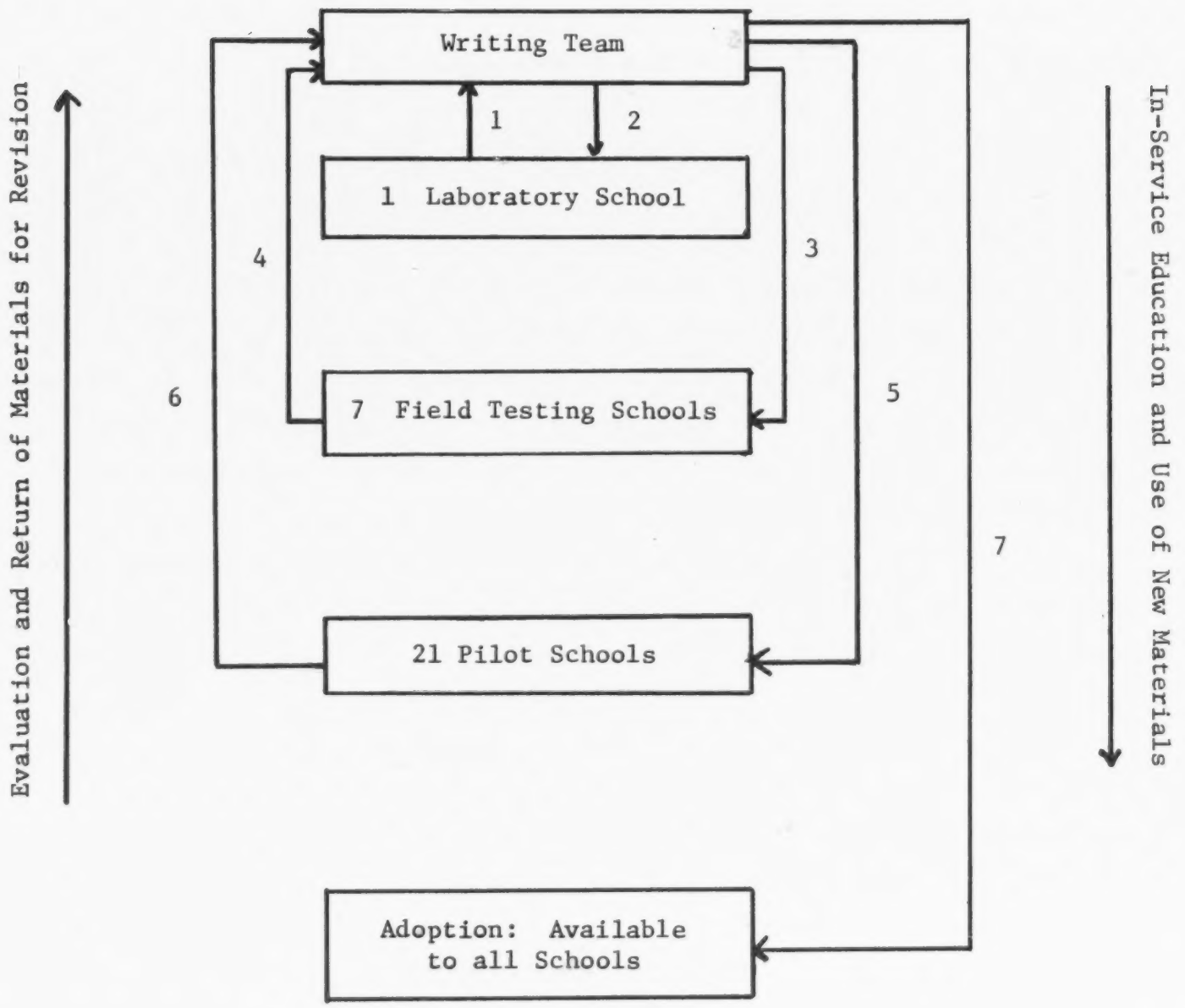
It was planned that what would finally emerge would be a prototype instructional program in English, grounded in theory, articulated from kindergarten to grade 12, evaluated in laboratory and field trials, complete with tested plans for dissemination to the schools of Hawaii and for large-scale inservice programs. The entire development process--from theory to design to production to pilot testing in selected schools--was to be completed for grades K-12 in five years, or by 1971.

Modifications of Original Development Plan

The entire development process was planned to be completed for grades K-12 by the fall of 1971. Installation in the schools was to begin after sufficient lead time (a year to eighteen months) to develop specifications,

Figure 5

Cycles of Materials Development



locate publishing sources, and get the materials produced. The original plans had been made in the rosiest days of the "Great Society" program of the Johnson Administration. A steady decline of federal funds after 1966 caused not only a corresponding reduction in original project targets, but also a widening lag. The project staff expected the slippage, and fallback positions had been planned, but it was not well understood by the top administration, the State Department of Education.

In the meantime, schools were clamoring for "results," for products to use. There was little understanding of the development process, particularly of the time-consuming validation phase. There was even less knowledge of the fact that fairly extensive "pieces" of the program were already replacing the ongoing program in five field location schools and the Laboratory School. It had been expected that the project would have completed programs for widespread installation by the third year of the project.

By the spring of 1969, there was enough negative feedback to the Legislative Education Committee hearings that that body directed the project to curtail all secondary development work, concentrate on completing and installing a first increment of the program in 1970-71, and pass responsibility for the English Project to the State Department of Education. Following this mandate, the Board of Education directed the project to accelerate installation, place a K-3 package in at least one class in every elementary school, and complete the 4-6 package by September of 1971.

In summary, the two major modifications involved: (1) the initial scope of development--changed from K-12 to K-6; and (2) the timing of installation--the first installation push was moved up at least two full years. Of interest, but of less importance, was the developers' change in thinking in regard to PERT. What they discovered about PERT was that meeting commitments and deadlines for the project depended on factors completely beyond their control. The most generous of time allowances for anticipated snags, the loosest of slacks, could never solve the problem of getting decisions past some block to the system. PERT came to be thought of as a useful tool, but only at the most general level.

Actual Procedures for Development of Product

Development

The Hawaii English Project has employed a staff of some 30 to 50 persons (depending on the time and the year), including university specialists and master teachers in the field of English, writers, evaluation specialists, media technicians, production specialists, and clerical staff. The original development staff included the seven member Directorate of the Hawaii Curriculum Center, but, as noted earlier, the Directorate ceased to exist when the Hawaii Curriculum Center organization was modified and its members are no longer directly involved in the development of the project. Presently, an administrative director from the Department of Education, three chief planners of the three sub-programs and their support staff are the professional staff primarily responsible for development. Other staff members are also involved in evaluation and installation project activities.

The first steps of development involved specifying the criteria for the curriculum design. Several elements were identified that would answer several formal educational questions: What knowledge and skills should be developed and why; and when, where, how, by whom, and for whom? These elements included:

1. Aspects of the General Program of English
    a. A program definition of English
    b. A rationale for the English program
    c. A statement of general program goals
    d. A statement of curriculum areas not covered by the new design
    e. A description of the general curriculum framework within which the program developed
2. The Sub-Programs of English
    a. A description of the sub-programs
    b. A statement of the assumptions, goals, and rationale of each sub-program
    c. A description of the general approaches to instruction
    d. A description of the materials of the curriculum
    e. A list of sub-program elements and components and a description of the way in which they are organized

f. A description of the kinds of evaluation procedures and instruments used for the program, including recommendations for reporting progress to parents

g. A description of the proposed uses of time, space, and organization for each sub-program

h. A statement of essential training for teachers of the program

Many of these descriptions, definitions and answers evolved as the materials and techniques were designed, developed and revised. As the systems approach demanded, there was constant interplay between the guiding framework for development and the actual development activities.

In all three sub-programs, each unit or component went through the following type of development activities. First, the general goals for the component were identified. Then the program planners were encouraged to specify behavioral-instructional objectives that flowed naturally from the goals. However, precise behavioral statements were not required. The principal developers believed that behavioral terminology more often obscures than clarifies curriculum objectives. They pointed out that vast compendia of behavioral outcomes produced by educators have been found unwieldly and generally unuseable. Furthermore, relatively trivial, but readily definable, objectives may be given more attention than objectives which are intrinsically more important but highly resistive to precise behavioral definition.

Next, the planner thought through ideas, reviewed previously developed materials and examined relevant research efforts. He then developed a prototype (i.e., sequence built on promising ideas consonant with the emerging design) that was tried out in the Laboratory School with a small group of children for whom the component was targeted. The prototype was modified on the basis of the feedback obtained during the first small tryout; often the writer/planner himself taught the students with the materials and received immediate feedback; at other times he observed the students using the materials without directly involving himself. In all cases, extensive notes were recorded so that modifications could be made later. If the idea in prototype form did not appear to fly, or give good indications that it would after the necessary modifications were made, it was dropped. If the prototype seemed promising, necessary modifications were made and the prototype was made

ready for the first testing in a site school, where it would be tried out with one or more classes of students.

Formative evaluation data was gathered during this prototype testing by the writer/planner and by other observers; both looked for specific things and used specially developed forms to record their findings. Depending on the component there were from two to five of these prototype on-site testings before the component was considered ready for final field testing or actual installation in the schools. A typical modification that was made on the basis of these series of trials was what the developers called "streamlining" or the elimination of a sequence of steps. Often this modification and others specifically related to format of materials were made because of cost factors.

In short, the actual procedures for development reflect the general curriculum development process indicated in Figure 5 of Cycles of Materials Development. While there was some variation within and across sub-programs, this systems approach guided the development of curriculum components through similar channels or activities.

Formative Evaluation

Formative evaluation, as noted above, was a continual process. Curriculum planners, section chiefs, and the project manager needed information continually for revising curriculum objectives, materials and procedures. In conjunction with the summative evaluations conducted during 1969-70 and 1970-71, extensive internal formative studies were conducted as the basis for decision-making within the Hawaii English Project. The initiative for many of these studies came out of questions posed by the curriculum planners or project administrators.

To give the reader an appreciation for the extent of the formative evaluations, the procedures followed, the techniques used and the results, eleven formative evaluation studies are summarized in Appendix A in chart form including three columns: (1) evaluation questions, (2) procedures and (3) findings. These studies were conducted in conjunction with the 1969-70 summative evaluation and pertained to questions of appropriateness of materials and techniques used in the Language Skills Program.

SUMMATIVE EVALUATION

Evaluation Staff

The design of the evaluations and the collection and analyses of data were done by the evaluation staff of the Hawaii English Project under the direction of Dr. Thomas R. Owens during 1969-70 and Dr. George Omura during 1970-71. Dr. Owens was a University employee assigned to the project. Functionally and organizationally, he belonged to the project. Dr. Omura was employed in the State Department of Education. Members of the evaluation staff were employees of either the University of Hawaii or the State Department of Education.

1969-70 Summative Evaluation

The materials tested during this evaluation had gone through several testing and revision cycles over the previous three years. Since the sub-programs were designed to operate independently, they were evaluated independently; for each sub-program the evaluation design, subjects, measures and results were noted. Only K-2 elements of the Language Skills Program, the 2-4 or B and II of the Literature Program, and grade 4 of the Language Systems Program were involved in this evaluation. The evaluation of the Language Skills Program section was by far the most comprehensive. Thus, the summative evaluation of 1969-70 covered essentially the pilot- and field-testing phase of the curriculum development process, and it involved students in a rather limited number of schools.

Language Skills Sub-Program

Evaluation design. For the Language Skills Sub-Program the evaluation design called for the collection of minimal data on all 1913 students using the program, maximal data on a smaller number of students, and ad hoc data for special evaluation studies. Both absolute and relative standards for judgment were employed. Student performance on internal criterion-referenced measures built into the instructional system itself was judged against planner expectations specified in advance. Student performance was also judged on two relative bases: comparison of student performances over the four quarters of the school year with outcomes of children in the program in prior years and with non-program children. Data concerning teachers'

background, attitudes, criticisms and classroom performance was also collected, but more for descriptive than for comparative purposes.

Subjects. All 1913 students and their 91 teachers who were using the Language Skills Program participated in the evaluation. About 10% of the students were from upper socioeconomic levels, 50% from the middle level, and 40% from the lower socioeconomic levels. There were 32 self-contained classrooms in which a single teacher worked with approximately 30 children and 23 three-on-two classrooms where three teachers worked jointly with approximately 60 children of two or three grade levels. There were ten K-1 combinations, seven K-1-2 combinations and six 1-2 combinations within the three-on-two structure. There were similar cross-grade groupings in self-contained classrooms. Of the 91 classroom teachers, 53 were in pilot schools where the instructional package was being used for the first time and 38 were in field schools where some materials were undergoing initial tryouts while others were being tested for the second or third year. About 85% of these teachers had attended an Hawaii English Program teacher training workshop. There were 114 non-HEP students who participated in the comparative study of HEP and non-HEP students. These non-HEP students were all second-graders from one school in a district and were compared with 113 HEP students, also all second-graders, but from a different school in the same district. The two schools were matched on four criteria: (1) reading scores of second-graders on the California Reading Test for 1968-69; (2) scores on the California Test of Mental Maturity for 1968-69; (3) number of second-graders, as all second-graders in both schools participated; and (4) location in the same school district. Children in the HEP school were distributed among eleven K-1-2 self-contained classrooms. Children in the comparison school were distributed among five classrooms, three of them self-contained and two three-on-two's; these classes had first- and second-graders, second- and third-graders, or all second-graders. The backgrounds of teachers in the two schools were quite similar, and both schools spent comparable amounts of time per day on language skills.

Measures. In order to obtain a record of the daily activities of students, four kinds of observations were conducted.

1. Individual use of new components: A paraprofessional data collector observed individual children working with a new component, recorded the way the child selected it, the name and types of errors he made while using it, and the extent to which he followed the prescribed directions.

2. Classification of student time by grouping patterns and by content area. The technique was an observation procedure in which observers recorded specific student behaviors that indicated whether the child was in independent activities, pupil-pupil activities, pupil-teacher activities, small group activities, total class activity, or no language skill activity, and what content area (e.g. reading or handwriting) the student was working in.

3. Student use of various types of equipment. Here the amount of time spent using the equipment was recorded by a classroom observer.

4. Use of time by "fast" and "slow" students. Here observers recorded the time spent by these two groups of students in the various content areas of language skills and in various grouping patterns.

Teachers were observed in the classroom by paraprofessional data collectors who recorded the kinds of activities performed by teachers and a behaviorally-stated description of that activity.

Three criterion-referenced measures were employed:

1. Language skills mastered. The assessment of each component in the Skills Program is built directly into the materials. For example, a child who has covered the reading words in a particular card stack is tested by the teacher or another student on the last section of cards within the stack, which includes a cumulative review of earlier cards in the stack; a child must achieve 100% performance on this last set before he can progress to the next level. Specific criteria and procedures for measuring the successful completion of each component are contained in the teacher's manual.

2. Time required to complete components of the Language Skills Program. These data were obtained from teachers' roll books which showed the entrance and exit date of each child in each component.

3. Self-directed learning skills. Eight self-directed learning behaviors were rated quarterly by teachers for each child. Examples of such behaviors are: student selects some of his own activities to work on; follows through on his activities after he has selected them; and marks his own progress in his record folder.

All second grade students in Hawaii also took the California Reading Test as part of their minimal testing program. In addition to the California Reading Test and measures of student time by grouping patterns and by content areas of language skills, the following measures were employed: the California Test of Mental Maturity; Hollingshead Two-Factor Scale of Social Status; the Self-Concept and Motivation Inventory developed by Farral, Malchus and Reitz; and performance measures constructed to reflect HEP objectives without putting non-HEP students at a disadvantage--an oral reading measure, a handwriting test, a listening exercise, a measure of self-directedness, and a measure of attitudes toward selected school activities.

Measures of attitudes and perceptions included a teacher questionnaire which solicited their attitudes about the program, principals' and visitors' perceptions, anecdotal reports and comments of outside experts.

Results. The following are some of the major conclusions reported pertaining to the Language Skills Program:

1. Children in language skills classrooms largely bore out the curriculum planner's expectations of how they would spend their time during the language arts period; evaluation findings generally support the claims made for the individualization of the Skills Program.

2. There was a wide variation in the amount of time children took to complete given skills components; the spread was interpreted as evidence that the program was accommodating children's learning rates as part of the individualized instructional approach.

3. Children in the HEP program with below average IQ's or in the lower socioeconomic level scored significantly higher in reading than their non-HEP counterparts, as measured by standardized test of

achievement. These findings supported the hypothesis that the HEP program was particularly effective with children lacking the usual prerequisites to "success" in school--the group that educators in Hawaii have been particularly eager to help.

4. No significant gain was found for HEP children between the ends of the first and fourth quarters on the self-directed learning behaviors as rated by teachers quarterly over the school year.

5. Student performance on criterion-based measures in the program met the planner's expectations in most cases.

6. When second-graders in the HEP Language Skills Program at one school were compared with children in a central group at another school, the HEP group scored slightly, but not significantly, higher on 12 out of 17 language skills measures and significantly higher on an applied measure of self-directed learning capacity.

7. "Slow" and "fast" learners distributed their time among content areas in a roughly similar pattern except that the slower ones tended to spend less time in reading and more time in "non-productive" activities; it was found that teachers were spending slightly more time with fast students than with slow ones.

8. Teachers were spending their classroom time in a distribution pattern consistent with the program's philosophy and guidelines; with few exceptions, the teacher's role supported the individualization of instruction.

9. Classroom management practices varied widely, but most teachers observed were responding well to the needs of individual children and permitting them considerable freedom to select curriculum components to work on; the program was being used as intended in over 90% of the classrooms observed.

The reader should be re-advised that the above interpretations by the developer are based upon data reported in the Annual Evaluation Report of the Hawaii English Project for 1969-70 (Owens, 1970). However, additional interpretations may also be given. A comprehensive and detailed evaluation of the sort conducted by HEP presents a wealth of data. HEP is to be commended on the extent of their evaluation effort. The following

represent some supplementary and deliberately selective interpretations by the present authors.

1. A comparison of HEP student performance on the California Reading Test (CRT) with non-HEP students of previous years showed declines in reading performance in four of five field schools. This decline was evident in both vocabulary and comprehension sections of the CRT. No tests of significance are presented in the evaluation report.

2. On performance measures specifically developed for the evaluation, there was no significant difference between HEP and non-HEP students in oral reading, handwriting, and listening.

3. Of 17 measures reported on HEP vs. non-HEP students, the only significant difference in favor of HEP students was found in performance on a "self-directed" learning task. The task consisted of addition problems during which the teacher left the room. Upon her return, she collected papers and scores were based on problems attempted. Apparently HEP students kept attempting to add.

Language Systems Sub-Program

Evaluation design. This evaluation was designed to answer two questions: (1) What are the learning outcomes for children in high and low SES and IQ groups? and (2) How do the end-of-year scores for HEP and non-HEP children compare? To get answers to these questions, evaluators obtained measures on both control and experimental students.

Subjects. While about 300 students were surveyed to obtain their attitudes about the program, only 25 fourth grade students were in the experimental group and 20 in the control group when the two evaluation questions were examined.

Measures. Evaluators assembled and recorded socioeconomic status data, IQ scores, and SCAT aptitude scores. The scores on preview and review tests and on an end-of-year test were then examined in relation to each of these scores. A comparison test to determine skill in applying linguistic principles was given to HEP and non-HEP students.

Results.

1. Although the evidence is still highly tentative, indications are that children of low socioeconomic status have about as much chance of succeeding in HEP as children of higher socioeconomic status.

2. Project students' scores were not significantly different from those of the comparison group on the linguistic principles measure. Project students scored slightly lower on attitudinal measures; however, no means, variances, or tests of significance are reported for the attitudinal measures.

Literature Sub-Program

Evaluation design. This program (Band II, grades 3-4) was tested in 19 classrooms in eight schools in seven districts throughout the state. Teachers selected to teach the experimental materials arranged their own schedules and taught the program without special prior training. Instead literature curriculum planners from the Hawaii English Project visited each of the schools monthly to train and support teachers and to observe and evaluate the materials as they were being taught. Tests were administered in all eight schools to assess student growth in the ability to respond to, understand, and enjoy literature. These instruments consisted of a pretest, a mid-year test, a posttest, and a student literature inventory. Experimental and control groups were included for each testing; each group consisted of a random sample of students.

Subjects. For the pretest, the experimental group consisted of 660 students in grades 2-4; a comparison group was made up of 42 second- and fourth-graders at a control school. For the mid-year test, the experimental group consisted of 55 HEP students in grades 2-4 and the control group consisted of 29 fourth-graders from the comparison school. The experimental group and the control group consisted of 52 students in grades 2-4 and 24 fourth-graders, respectively, for the posttest. For the inventory, the experimental group consisted of 573 HEP students and the control group was made up of 25 students from the comparison school.

Measures. The pre-, mid-year, and posttests were designed to measure the students' ability to understand and appreciate literature. Each test consisted of four items based on a story which was read to the students before

the test; the items covered the theme, plot, structure, and characters of the story. The student inventory was designed to discover whether the selections and activities appealed to the children and whether they found pleasure in literature. All measures were developed by project staff.

Results.

1. The results of the pre-, mid-year, and posttests did not reveal differences between HEP and comparison groups.

2. Data on the student inventory indicated that children in both groups had a positive attitude toward literature. No significant attitudinal differences between HEP and non-HEP students were found.

1970-1971 Summative Evaluation

A relatively comprehensive evaluation was conducted for HEP during 1970-1971.

Evaluation Design

The design, in essence, applied to (1) pre/post measures to determine change in student behavior and (2) experimental/control measures to determine changes in HEP and non-HEP groups. The experimental group consisted of a random sample of field, pilot and installation students, whereas the control group consisted of a random sample of pupils in non-HEP classes. The major focus of the evaluation was put on the four subsystems of the Language Skills Program at the K-3 levels and on the area called "self-direction." Covariates were identified for control purposes and for the purpose of making the groups comparable; these covariates were: socio-economic status, sex, IQ, years in school, classroom organization (self-contained or three-on-two) and grade level combination within classrooms. The Northwest Regional Educational Laboratory conducted an educational audit to insure use of objective assessment, appropriate data and valid reduction methods and interpretation.

Subjects

The individual student, not the school, was the unit of analysis in this evaluation. Randomizing procedures were applied to select specific students for the various sample groups dictated by the design. A total of

396 students were selected from installation schools, 95 from field schools, 120 from pilot schools and 365 from non-HEP control classes. Students from all grade level combinations and from self-contained and three-on-two classrooms were represented in the sample groups. Control schools, from which random samples were selected, were chosen on the basis of the following criteria: California Reading Test results, grade level combinations, self-contained vs. three-on-two classes, and number of students in the school.

Measures

The following were the measures employed in this evaluation. They include national standardized and HEP-developed instruments. In selecting these instruments emphasis was put on the four subsystems of the Language Skills Program (aural, oral, reading and writing) and on the learning approach or the degree of "self-direction" demonstrated by the students. The sample of students, time of administration and purpose are noted for each measure.

1. SCAMIN (Self Adequacy Measure): All students in sample (K-3, pre/post) to assess students' self-concept and motivation.

2. Handwriting exercise: All sample students in 1-3, pre/post, to assess change in handwriting ability.

3. HEP listening test: K only, post only; grade one, pre/post; to assess change in listening ability.

4. Cooperative listening exercise: Grades 2 and 3 only, pre/post, to assess changes in listening ability.

5. Kuhlman-Anderson Test: Grades K and 1, pretest, to assess intelligence.

6. California Test of Mental Maturity: Grades 2 and 3, pre/post, to assess intelligence.

7. Gates-MacGinitie Reading Test: Grades 2 and 3, pre/post, to assess reading ability.

8. Demographic data forms: All samples, pre-, to provide SES data.

9. Attitude toward school: All samples, pre/post, to assess changes in attitudes.

10. Student interviews: Sub-sample and all experimental samples, pre/post sub-samples, to determine student attitudes toward HEP.

11. Parent interviews: Sub-sample of HEP students, pre/post sub-sample, to determine parent attitudes.

12. Teacher/principal questionnaire: All involved teachers and administrators, pre/post sub-samples, to determine attitudes and knowledge.

13. Speaking exercise: All sample students, post only, to assess change in speaking ability.

14. Self-direction: All sample students, post only, to assess degree of self-direction and independence.

15. Classroom observation form: Sub-samples, post only, to assess degree of HEP implementation.

Results

Data from this evaluation are now being analyzed. Some preliminary findings are available, however. They include:

1. The HEP is being implemented as planned in the guidelines established for the program.

2. Parents, students, teachers and visitors indicated enthusiastic approval of the program.

3. There are some early indications that HEP students in the Literature Sub-Program are reading more books than the non-HEP students.

4. A comparison of 57 HEP and 50 non-HEP third-graders used the Gates-MacGinitie Reading Tests. Both vocabulary and comprehension subtests indicated significantly higher scores for HEP students of low and medium ability levels. No significant differences were evident for students of high ability levels.

5. A comparison of 107 HEP and 88 non-HEP second-graders on the California Reading Test indicated significantly higher total scores by HEP students.

An Interim Evaluation/Audit Report by the Northwest Regional Educational Laboratory indicated that:

1. The operation and curriculum of the project were consistent with the HEP project design statement.

2. The Language Skills Program seems to be achieving its operational and curriculum objectives.

3. The design and sampling procedures will assure that reasonably valid comparisons will be made between the achievement of HEP and non-HEP students.

At this time, neither the final evaluation report nor the final audit report is available.

DIFFUSION

Agency Participation

Presently, the Hawaii State Department of Education is the only agency involved in the diffusion of the Hawaii English Program. Several commercial publishing firms have been contacted; a Request for Proposal to publish the program was circulated in the fall of 1970. The format and comprehensiveness of the materials and copyright problems have delayed the selection of a commercial publisher. Approximately one-third of the total dollar value of the program is especially designed materials for which copyright has been obtained in the name of the State of Hawaii; another third involved commercially available educational materials; and the remaining third involves commercially available equipment.

Diffusion Strategy and Efforts

Diffusion efforts for the Hawaii English Program were given impetus by the groundwork already laid before the project began. Early in 1965, an education-conscious State Legislature had laid a series of challenges for the schools in its bold "New Hawaii" program. The Governor's Conference on Education Change in November 1965, which gathered noted national experts for a week-long dialogue with Hawaii's school administrators, Board of Education members, and leading legislators, had primed the entire system for needed school reforms. More especially, the extensive needs assessment conducted by the Department of Education in 1965, besides pointing to the critical needs in education, served to prime the people of Hawaii for a new curriculum in English. However, diffusion was still not easy sailing. Rapid change, especially on a big scale, was hard to come by. The surprising thing was that the resistance came not from teachers as much as from other

quarters. The developers' experience here pretty much exploded that myth of teacher resistance to change.

Once development began, efforts for diffusion of the program were initiated. Teachers began to participate actively by trying out the materials and providing detailed feedback, and by being trained in workshops, in training institutes or directly through interactions with project personnel. When the Board of Education adopted the Hawaii English Program as the state's English program, many of the teachers in Hawaii were not only familiar with the program, but requesting to teach where the program was being installed.

Diffusion, on a national scale, has included presentations at conventions and other professional meetings, invitations to English specialists to study and review the program, and responses to inquiries from school districts across the country. Diffusion efforts on a national level are starting to expand and will likely mushroom if school districts on the mainland adopt and successfully adapt the program to their district needs and/or a commercial publisher picks up the program to disseminate it.

Product Characteristics and Diffusion

Several characteristics of the product make it attractive for use in present-day classrooms. While the three sub-programs and their components are interrelated, many components or units could be used alone in any classroom setting. Under either arrangement, a high degree of individualized learning can be achieved.

Although the three sub-programs are related and complementary, it is possible to use each strand separately: Skills, Literature, and Systems each can be used as single programs. It is also possible to use some of the components in each strand independently as supplementary materials for the standard elementary classroom (examples are Typewriting, Songs, Language Systems Units, Literature Listening, etc.)

The modular design and kind of sequencing within the modular units allows flexibility in making adjustments to fit specific school and classroom organizational patterns. It can be used in the typical self-contained room or the team teaching situation; the Skills materials are adaptable to

a learning center or laboratory concept. HEP can be used in both graded and nongraded situations (although the latter is preferred). It fits in with the trend toward heterogeneous grouping, but it can also be used with more homogeneous ability groups. The modular units of Systems and Literature allow a great deal of rotational flexibility, which is a cost factor to be considered. One set of the materials in Systems and Literature is designed to serve an entire average-sized elementary school.

HEP may also attract potential users because it is a complete program in several respects:

1. It is designed as a <u>total</u> language arts program.

2. It is designed as a total instructional system--instructional goals, strategies, outcomes are identified.

3. It is designed as a total instructional <u>package</u>--with the exception of a few standard items, all the essential materials are contained in the package.

The following are characteristics of the product that may hinder its diffusion:

1. Scope and complexity of the total program might tend to overwhelm many. The innovation it represents, the sweeping departure from the traditional language arts curriculum, may make its implementation in a conventional setting more difficult than less innovative programs.

2. Teacher training as an essential feature of adoption may add cost/time/supervision factors that schools may be unwilling to undertake. While some training materials (videotapes, reference collections, bibliographies, etc.) have been developed and others are programmed, much needs to be done.

3. Cost may be a deterring factor. The developers point out, however, that the present costs (never stabilized because of the year-to-year bidding on small quantities) are not good indicators of what the final price may be under large-scale production.

ADOPTION

Extent of Product Use

In January 1970, the Board of Education formally adopted the Hawaii English Program as the official language arts curriculum for the public schools of Hawaii. The first increment of installation occurred in the fall of 1970 and resulted in implementation for approximately 23%, or 13,340 pupils of the K-3 enrollment. The budget for installation of the first increment was $1.5 million. Current projections call for a similar additional increment in the fall of 1971, with total installation for the K-6 program, for over 110,000 pupils, projected over a six year period. The actual rate of installation will depend on legislative funding.

While the program has not been adopted outside of the state of Hawaii, school districts in the United States and in other countries are inquiring about it and are planning to modify elements of it for their own students.

Installation Procedures

Presently, installation procedures in the state of Hawaii are being conducted by the State Department of Education. Special equipment going beyond what is conventionally accepted as standard equipment for classrooms is required for the Hawaii English Program. There are audio card readers, film loop projectors, cassette recorders, electric typewriters, a specially constructed housing for projector and screen, etc. Also, the classroom must be set up physically to allow for learning stations, floor space for creative drama, etc. The room must be wired to carry the equipment load. A training program, noted and described earlier, has been developed to meet many of the critical teacher training needs for the schools in Hawaii. Both formative and summative evaluations indicated successful results in the use of installation teachers, district coordinators, and summer workshops.

The State Department of Education in Hawaii does not plan to conduct installation procedures for districts in other states. The commercial publisher that eventually will be contracted to publish the program, and the individual districts who purchase the program will have to conduct their own installations. Presently, which procedures will be designed and available for other states is not know.

Information From Users

Extensive information has been obtained from the users in the state of Hawaii. Teachers, students, principals, and parents have provided feedback to project personnel regarding nearly every component presently being used in the schools. This information has sometimes been requested, and often volunteered. The general reaction has been favorable, yet critical comments, both negative and positive, have been made frequently, and have guided subsequent activities. In the 1971 evaluation study, an inventory administered to HEP classroom teachers, as well as installation teachers and principals, indicated the following specific points:

1. Most teachers felt that a three-on-two classroom organization was more appropriate for HEP than self-contained multi-grade or single grade classrooms.

2. Frustration was expressed over the inferior quality of equipment and frequent late arrival of materials.

FUTURE OF THE PRODUCT

The Northwest Regional Educational Laboratory, which conducted an evaluation/audit of the Hawaii English Program, concluded in their Interim Evaluation/Audit Report of January 25, 1971:

> The follow-through capabilities that are demonstrated by the development, installation and use of the innovative and exemplary system of language instruction at the primary grades places the State of Hawaii and the Department of Education in a position of offering real national leadership [p. 20].

In June 1970, the President's National Advisory Council on Supplementary Centers and Services awarded the Hawaii English Program an innovative project award. The program has been highly praised by English specialists who have studied it and seen it in operation, and there have been numerous inquiries from school systems across the country and some have led to implementation efforts that are presently under way.

The possibilities for impact are extensive. Whether or not such impact takes place will depend upon how future development and diffusion efforts are handled. The K-6 portion of the Hawaii English Program was completed

in August this year and the development of the complete 7-12 portion of the program has yet to begin; as noted previously, the early efforts on the 7-12 program were deferred until the K-6 portion was completed. The final design for a new 7-12 program has been prepared, however, and development is supposed to begin during the fall of this year. Many of the critical turning points experienced thus far in the Hawaii English Program should pave the way for this development.

CRITICAL DECISIONS

The reader should view the following descriptions as approximations of those crucial decisions made in the five year developmental history of the Hawaii English Program. For each decision point the following information is included: the decision that had to be made, the alternatives available, the alternative chosen, the forces leading up to choosing a particular alternative, and the consequences resulting from choosing an alternative.

While the critical decisions to be discussed should ideally be viewed in terms of the entire social/political context, the constraints, the pressures, the ambiguities, and even major personalities, the following "approximations" present a first order view of those forces "pushing for" the Hawaii English Project and those "pushing against" it. Both forces were intimately related to money and people. Forces that operated to keep the project alive and flourishing included: capable and interested personnel, Title III funds, and a primed and supportive group of school personnel, especially the Board of Education and many teachers. Forces that seemed to thwart its growth included: competition over state appropriations, rigidity in the Department of Education and in some school systems, and the lack of support from many school personnel. Although many decisions had unique forces and consequences, these general forces were ubiquitous. Interestingly enough, forces "pushing for" the project frequently seemed to result in consequences that increased the "pushing against" the project, and vice versa.

Although an attempt has been made to present the critical decisions or turning points in chronological order, it must be pointed out that these decisions were not usually made at one point in time, nor did they necessarily lead to the next decision presented in the sequence. It would be more

appropriate to view decisions in light of both the general forces mentioned above and the momentary events unique to each decision point.

Decision 1: To Put all Title III Funds Into the Hawaii Curriculum Center

The Department of Education's original application for planning funds under Title III ESEA followed the general pattern established by the title--the concept of educational service centers. From this, however, grew a plan for an educational development center for Hawaii that would fuse the resources (manpower, facilities, staff, and dollar resources) of the two institutions most concerned with educational change: the State Department of Education and the College of Education, particularly its Laboratory Schools. The State Department of Education made the decision to put all of its Title III funds into a joint agency called the Hawaii Curriculum Center, which would undertake the development of new curriculum programs. Officially, as far as the U.S. Office of Education was concerned, Hawaii's Title III project was the Hawaii Curriculum Center. The area of development selected by the Hawaii Curriculum Center in 1966 was the Communicative Arts, including English, foreign languages, and the arts. While projects were begun in all of these areas, the Hawaii English Project was by far the largest of these. The seven administrative districts wanted the Title III funds dispersed to them for district and school level projects in much the same way Title I funds had been apportioned. The Library Services Branch, which was planning a greatly expanded concept of the library as a supplementary services center, felt it had a legitimate claim on Title III funds. Some of the program specialists in the Office of Instructional Services looked to the funds as possible sources of support for their projects. In fact, prior to making the decision to put all funds into the Hawaii Curriculum Center, proposals for Title III projects were solicited from agencies and groups throughout the state. The decision to concentrate the state's allocation into a single project naturally aroused a host of internecine jealousies.

This jealousy over funds created one of the major forces "pushing against" the project. However, had Hawaii gone the route of most PACE (Title III) centers, what ensued would have probably turned out to be very different. The input from both the University and the Department in terms

of personnel and especially financial support would have been substantially lessened. It seems doubtful that the Hawaii English Program would have received the necessary support to become as extensive as it is, and to be adopted throughout the state.

This decision also had one other consequence. The USOE had difficulty understanding Hawaii's single system and the concentration of Title III funds on a single project. The state as the local education agency was not the usual pattern. The uniqueness of the joint operation and the fused organization was a big hang-up, and it was well into the project before officials came to understand what DOE/UH cooperation entailed. Another problem was the five-year life as opposed to a three-year life, the usual life span of Title III projects. These differences caused frequent questions to be raised by the USOE. Such questions, directed to the Superintendent's Office, tended, over time, to irk the chief state officer and to cause him to look upon the project as a headache.

Decision 2: To "Fuse" the University of Hawaii and the Department of Education

The Hawaii Curriculum Center was an outgrowth of longstanding activity by the University and the Department of Education, working for the most part independently, to improve instructional programs and practices in classrooms throughout the state. As noted in Decision 1, the need to establish an educational service center for Title III funds, led to the fusing of resources of the University of Hawaii and the Department of Education and the development of the Hawaii Curriculum Center as a joint agency. This joint institutional arrangement represented by the Hawaii Curriculum Center introduced a whole new organization which was neither "fish nor fowl," but a fusion, a whole new set of functions and working relationships. The new organization and the domain it defined for itself upset the status quo. Even with the approval of top administration, the new group was looked upon with a mixture of skepticism, resentment, and suspicion by people in both organizations. Earlier events had already aroused similar feelings. The changeover in the Laboratory Schools' functions from teacher training to curriculum research and experimentation had aroused considerable negative feeling; the exodus of many of the former faculties of the schools and their replacement by

younger staff more oriented to experimentation was not without cost. The College of Education had well-established interests in the standard curriculum for which it had been training teachers and administrators. The bold incursions of the new group into large areas of the school curriculum (English, science, music, the arts, Japanese), and proclaimed innovative departures from existing programs aroused a great deal of skepticism in the College of Education. And now the entry of University academicians into a position of policy formulation and fiscal control in curriculum development, hitherto considered school business, was looked upon with suspicion and resentment by key people in the Department. One source of difficulty was the confusion of roles of program specialists in the State's Office of Instructional Services. The large-scale curriculum development model advocated by the Center, departing as it did from the traditional model of guided development by the program specialists, stripped away an important function--or if they continued to perform the function, made of it a less meaningful activity.

Decision 3: To Give English Top Priority

The Curriculum Survey Reports, which summarized the findings of the Curriculum Survey of 1965, tried to answer three questions put to the Hawaii Department of Education by the Board of Education: What is being taught in our schools and for what purpose? How adequate is instruction? Are there equal opportunities for all children in the state wherever they live? Nine survey reports, one for each of nine school programs, were prepared. The Board of Education and the Department of Education, on the basis of the survey report for English, decided to focus major development efforts on the state's curriculum and instruction in English; it was apparent that the most critical educational need throughout the state of Hawaii was to upgrade the language arts curriculum. The decision led to a number of consequences, some more obvious than others. First, it paved the way for an extensive development program in English. Since the need for change in English was felt at all levels, support was initially more easily obtained.

Decision 4: To Adopt a Particular Curriculum Theory

Dr. King and Dr. Brownell had just completed a book on curriculum theory and design. Consequently, they were ready and able to provide much of the theoretical input for the development of the Hawaii English Program. Programmatically, adoption of their curriculum theory was most fundamental. Although actual development departed from faithful implementation of their theory, the input at early developmental stages determined the major direction of the developmental efforts. The types of questions initially posed and the attempt to answer these questions would have been quite different, had this theoretical input been lacking or had another theory model been adopted. It is quite amusing, however, to note that Dr. King himself pointed out that "such theories and models do not consider who to invite in to do the work--this is the only decision that is worth a hoot and its the one we don't even mention in the book." The next decision dealt with this very issue.

Decision 5: To Select Certain Chief Planners of the Sub-Programs

From a programmatic standpoint, the selection of the three chief planners was very significant. These persons put a strong individual stamp on the part of the program they developed. Different people would have come up with different programs, even though the separate developments of the sub-programs were governed by the overall theory noted under Decision 4. The "founders" of the Hawaii Curriculum Center and early developers of the Hawaii English Program were familiar with many of the experts in the country and had a large group to choose from. However, they were quite specific about which chief planners they wanted and considered the selection of these personnel as key decision points.

Decision 6: To Countermand the Negative Legislative Report

During the spring of 1967, some of the forces "pushing against" the Hawaii English Project made themselves heard again.

The Legislature's House Finance Committee, disturbed over financial accountability issues, submitted a negative report on the Hawaii Curriculum Center which would have curtailed severely the activities of the project.

The House Finance Committee was concerned over three issues:

1. The cost of development, projected at that time to be about a million dollars per annum.

2. The lowering level of federal funding. The decreasing trend was obvious by that time, and the Legislature was concerned with the question: Can the State afford to pick up the development tab if federal funds should terminate?

3. The dual administration bothered the Committee. They could not see how fiscal and administrative responsibility could be clearly fixed if something went wrong.

The report was counteracted by a supportive Senate Education Committee. A Conference Committee resolved the differences, and the Hawaii Curriculum Center obtained a new lease on life, and so did the Hawaii English Project. The opposing forces were temporarily muffled, but not for long.

Decision 7: To Separate the Resources of the University of Hawaii and the Department of Education

With the Hawaii Curriculum Center a joint effort, there was no clear or simple basis for responsibility. Throughout the history of the Center, there was actually no clear agreement by top administrators outside the Center of certain curriculum functions. What was the nature of curriculum development or curriculum innovation? Who does it? Where should the responsibility be lodged? There was also a great deal of ambiguity regarding curriculum development and implementation. At what point does one function end and the other begin? Whose responsibility are these functions?

Large-scale development itself was a totally new endeavor for the State. It made demands that were not easily met within the established policies and procedures of the Department of Education. There were new classes of personnel with different kinds of expertise outside the established classifications; top-notch people who commanded salaries beyond the normal scale; demands for staffing flexibility to enable quick and free crossovers between the two parent organizations and for quick hire and redeployment of personnel as special development needs arose; the use of outside consultants to a degree never experienced before. In general, the result-oriented working

style of the new group which tended to short-cut procedures and the frequent recourse to the more liberal procedures of the University structure, aroused the ire of the more procedure-oriented Department of Education organization. This was particularly true of personnel and business transactions. There were accusations of "working two sides of the street."

Furthermore, the development process itself was little understood outside the Center. The concept of validation and the time it takes were even less understood. The project's orientation to the future (how can we be sure you'll come up with an acceptable product five years hence?) was hard for some to live with. Even worse, a systems approach (which implies a deliberate endeavor and interdependence among a set of interrelated, interlocking decisions) might mean the relinquishment of a measure of control, power, and autonomy that different units of the Department of Education had come to consider peculiarly their own.

In the midst of this misunderstanding, several events took place that led to the separation of University and Department of Education resources. Title III funds were cut back, and the Center asked for either more funds or more time. The Department of Education was supplying much of the financial resources, and the "recognized" director of the Center was on the University staff.

Thus, the underlying jealousy sprang out when other forces came to bear on the Center/Project and made it vulnerable. The Department of Education felt that the University of Hawaii was monopolizing the funds that were actually coming out of their pot. Ironically, the University felt that it was giving up expensive personnel time to a Department of Education activity. The Hawaii English Project was just about to complete its third year, but had not delivered anything complete and tangible in the form of a product. At this time, the legislature dissolved the Hawaii Curriculum Center. Activities were assigned to the University of Hawaii and the Department of Education. The Hawaii English Project became the sole responsibility of the Department of Education. This was perhaps the most critical turning point for the program. While the shape of the project had been determined by 1969, its cast and characters molded, this turning point changed the entire nature of the operation, affected morale, and the whole feeling and tone of the venture was greatly influenced. Many of the

significant University and Department of Education personnel either immediately or eventually lessened or terminated their participation in the development of the Hawaii English Program. A new director was appointed and the general administrative tempo was changed. In short, even though the chief planners and their staff temporarily stayed with the project, the University became less supportive and the Department of Education became less critical now that the English Program was solely theirs. This critical decision led naturally to other critical decisions.

Decision 8: To Become Production-Oriented

In the spring of 1969 the Hawaii legislature was not convinced of the worthiness of the Hawaii English Project. They pointed out that unless they could see a segment of the program, e.g., K-3, by the fall of 1970, they could see nothing that would assure the survival of the project. Also by December 1970, they wanted good indications that the remainder of the K-6 program would be delivered in the fall of 1971. The Board of Education then directed implementation of the K-3 package by September of 1970 and completion of the K-6 by September 1971. The operation, under its new director, "decided" to be much more production-oriented with school delivery uppermost. This decision greatly reduced the research and experimental aspects of the project, but did keep the project alive. The 7-12 development was also suspended until the project's capability to deliver the K-6 portion could be demonstrated.

Decision 9: To Adopt the Hawaii English Program as the State English Program

Ordinarily the state of Hawaii did not adopt one single program for a state program in a content area. However, in the winter of 1970 the Board of Education adopted the Hawaii English Program as the English Program for the state. The K-3 portion was being field tested at the time and was to be installed in the fall of 1970. The Board had visited many field schools and their feeling had been quite unanimous that the language arts curriculum produced by the Hawaii English Project was second to none in the nation.

The project staff made presentations, on two occasions, to the Board; and so, the Board knew the program as well as people at this policy level

ever get to know a program. Obviously, this decision gave a tremendous boost to both development and diffusion/adoption efforts.

Decision 10: To Proceed with Secondary Development

In the spring of 1970 and 1971, the action of both branches of the State Legislature in funding the Hawaii English Program installation appeared to be a kind of vindication for the program. The overall K-12 design was completed during the summer of 1969 and approved in the winter of 1970, but the approval to proceed with secondary development was always tenuous, if not somewhat doubtful. The decision to proceed with the secondary development plans was not actually certain until the spring of 1971.

In retrospect, one could conclude that the Department of Education and the University of Hawaii had, in spite of interpersonal problems and eventual separation, produced an innovative and growing Hawaii English Program. And, perhaps most importantly, the Hawaii Curriculum Center staff, who were from both the State Department of Education and the University of Hawaii, worked productively, creatively and congenially with many external pressures and forces impinging upon them.

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APPENDIX A

SUMMARY OF SELECTED FORMATIVE EVALUATION STUDIES

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
1. How reliable are the diagnostic tests used in the HEP? If the tests are too short to be reliable they need to be lengthened or otherwise improved.	For each of five reading components ten students from Kalihi-Uka were selected who had been diagnosed as not needing the component. A second test for each component was developed that was twice the length of the regular diagnostic test. Students in this study were tested on the longer version three weeks after the initial testing to see if their performance was still above 90% on the longer test.	Of the 50 children tested, all but two achieved at least 90% on the longer retesting, indicating that although the regular diagnostic test is short, it is reliable for determining which children do not need to enter a component.
2. How reliable are the teacher quarterly ratings of student performance on eight behaviors related to self-directed learning? Items for rating student behaviors that are low in reliability need to be revised.	Four self-contained classrooms were selected for the study from one field school where paraprofessional data collectors were employed for the year during the two-hour language arts periods to observe and collect data on a single class. At the end of the second quarter each of the four classroom teachers and four data collectors independently rated all children in their respective classrooms on the frequency with which they practiced eight self-directed learning behaviors reported on the pupil progress reports. Each behavior was rated on a three-part scale: "seldom or never", "sometimes", or "usually or always." Data collectors were also permitted to use a code for "unable to judge." Each classroom pair	The difference between teachers' and data collectors' average ratings across the eight behaviors was -.56, .51, .49, and -.07 where the negative sign indicated teachers' ratings were lower than that of the data collectors. The inter-judge reliabilities ran .67, .61, .42, and .28. A small absolute mean deviation combined with a high mean correlation per item would be the best combination. The items are shown below: Behavior — Average Mean Deviation — Correlation 1. Works without disturbing others — .13 — .59 2. Marks his own progress in his record folder — .23 — .69

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
	was treated as a separate case. Correlations between teacher and data collector ratings were computed for each item over all students. Pearson's r, deleting all cases where the data collector marked "unable to judge," was used. In addition, mean ratings for each item were computed for each judge and deviations for pairs of raters were studied.	

Behavior	Average Mean Deviation	Correlation
3. Follows through on his own activities after he has selected them	.25	.54
4. Helps other children to learn	.35	.55
5. Goes from one activity to another without teacher direction	.51	.49
6. Solicits help from the teacher or other students when he needs it	.61	.34
7. Selects some of his own activities to work on	.73	.31
8. Evaluates his own work at the end of the language arts period	.77	.83

Suggestions were made to the planners for improving the working of the behaviors.

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
3. Are tutors who have actually completed a component as learners more effective than tutors who were diagnosed as not needing the component and thus have not gone through it as learners? If children who have passed a diagnostic test covering a component perform as well as those having gone through the component as learners, then such children should be allowed to tutor others in that component.	One hundred and nineteen students from Kalihi-Uka who had recently completed or been diagnosed as not needing one of two listening/speaking programs participated in this study. Each child was observed while tutoring a learner. The number of sound contrasts he tutored and the number of tutor procedural errors were recorded by the data collectors.	Of the tutors observed, 41 qualified by the diagnostic test and 78 qualified by successfully completing the component as a learner. The tutor procedural errors for the first group was .54 per tutor while for the second group it was 1.68. Since tutors who qualified through the diagnostic test outperformed those who went through the component as learners, they were allowed to continue tutoring during the year.
4. How effective is the Language Skills Subprogram for non-English speaking students?	The eleven teachers at Kalihi-Uka were asked to identify students in their classroom who were non-English speakers at the time of their entry into school and who were also in the Language Skills Subprogram on or before September 1968. Their progress was checked in June 1970 in terms of level completed within the HEP reading program and relative	There were five first-grade and three second-grade children who met the criteria. One first grader had read over 250 words, two had read over 3 books one had completed 15 books, and one over 60 books. Out of 102 first-graders they ranked 8, 44, 61, 70 and 87. Of the second-grade children, one had read over 15 books, another over 70, and the third over 100. Their relative class standings in

SUMMARY OF SELECTED FORMATIVE EVALUATION STUDIES

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
	standing among the other first-or second-grade children in that school.	reading were 6, 17, and 58 out of 86. Although the number is small, non-English speaking children who are exposed to the HEP system for at least one year are likely to make as much progress as English-speaking children in the program.
5. What is the performance level of current sixth-grade children at Kalihi-Uka on the SRAIIa Power Builders series? Sixth-grade level of achievement in reading is being operationally defined in the HEP program in ways that will allow the student to select from about five methods of demonstrating his competency. One of the ways being considered is his performance on the SRA Power Builders series which has graded materials up to the 7.0 grade-level equivalent. Information	The HEP reading planner selected nine out of fifteen booklets and tests from the SRA seventh-grade reading level as being the best measures. The 83 sixth-grade children at Kalihi-Uka were randomly assigned to take three different tests. There were between 16 and 38 students who were taking each test.	Of the 9 items on each test, the means for each test ranged between 4.50 and 6.14 and the standard deviation between 1.88 and 2.39. Inter-test correlations were low. Only 13 of a possible 36 pairs of tests correlated significantly at the .05 level of confidence, and of these only 7 pairs had correlations above .80. Appropriate cut-off scores were recommended for students who would pass two sampled tests out of five equivalent tests from one group and one out of three equivalent tests from the second group. The probability of a student passing all three tests by chance would be only 1 in 100.

SUMMARY OF SELECTED FORMATIVE EVALUATION STUDIES

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
was needed as to how equivalent the 15 tests are and how non-HEP sixth graders score on these tests.		
6. Is there a difference in reinforcement effect from tutoring as compared with engaging in instructional group games?	A total of 30 students from six K-2 classrooms at Kalihi-Uka who had recently completed five sections of a Dialect Markers (D.M.) component (a listening/speaking program intended for local dialect-speaking children) but had not yet tutored nor played the DM games (similar to Lotto) were randomly sampled for this study. Of these 30, ten were randomly assigned to tutor the program to another child, ten to play the DM games, and ten were given other tasks in the skills program but neither tutored nor played the DM game. Treatment conditions were assigned within classrooms so as to control for the possible teacher or classroom climate effects. Procedures were implemented to assure that children engaged in only the one assigned treatment. Students were individually given a special pretest covering the sounds of the DM unit and a	The total of mean errors made on the pre-test by students engaged in games only, tutoring only, or neither was 3.6, 4.6 and 2.0 respectively while the post-test scores for these three groups were 3.5, 2.0, and 2.0. When analyzed in terms of gain score only, the group engaged in tutoring made a positive gain. They increased .6 in program words, .6 in applied words, and 1.3 in nonsense words. The games group decreased 1.3 on program words and increased .3 in applied words, and .9 in nonsense words. Although the group tutoring in this experiment gained more than those engaging in games, several limitations of the study prevented further generalization except to make the planner question whether the game selected was appropriate for the intended purpose.

SUMMARY OF SELECTED FORMATIVE EVALUATION STUDIES

EVALUATION QUESTION AND RELATED DECISION	PROCEDURE	FINDINGS
	parallel post-test two weeks later. The number of errors made by each child was recorded under three headings: program words, new words using the sound contrasts learned, and nonsense words using the sound contrasts learned.	
7. Are the objectives in the reading, handwriting, and typewriting programs properly sequenced in order of difficulty?	As a partial test of the hierarchy in terms of difficulty level of the tasks involved, a study was made to determine the number of children, if any, who were diagnosed as needing one component but not needing a higher level component. The records of approximately 300 K-2 children from 11 classrooms at Kalihi-Uka were examined. Five levels in the reading program were tested, three in the handwriting program, and two in the typewriting program. For example, the records were checked to determine how many children were diagnosed as needing a letter discrimination component but not needing a word discrimination, letter recognition, or word discrimination component.	The results of this study showed no children who needed a lower level component who did not need a higher level component. Several qualifications should be added, however. Some teachers may have stopped the diagnostic testing shortly beyond where they found a student needed to enter the program as a learner. Secondly, if actual learning hierarchies were tested by having some child engage in a higher level component before a lower level component different results may have been found. In general, however, the evidence strongly suggests that the components are properly sequenced.

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
8. Language Master Utilization 1) Does the utilization rate of the Language Master (an audio card reader) change over the school year? 2) How does the utilization rate change as the number of machines in a classroom moves from one to three? 3) What variations in utilization exist from class to class and from one machine to another?	The instruments used in this experiment were hidden counters inserted into the machines to register the number of cards fed into each machine per week. Neither teachers nor students were aware that the counters were being used. A random sample of Language Skills classrooms at Kalihi-Uka and Makaha was chosen and a research design and directions given to the resource teacher and VISTA volunteer at the two schools. The design specified which classrooms were to be observed each week and the number of machines to be in each. The design was balanced so that some classrooms were adding machines each week while others were decreasing machines. Weekly counter readings were taken and the counters then set back to zero.	Weekly counter readings on 8 machines monitored each week showed an average of 524 cards used per machine per week or 1,048 per self-contained classroom. Assuming 28 students per class, children used an average of 37 cards per week. Over a period of six consecutive weeks during the first semester, the amount of classroom utilization of Language Masters varied greatly from 1,331 to 356. The average utilization for three self-contained classrooms at Makaha and Kalihi-Uka changed from 653 to 1,110 to 1,634 as the number of machines changed from one to two (the normal allotment) to three. In a three-on-two classroom, the utilization increased from 3,196 to 3,860 to 4,516 as the number of machines changed from three to four (the normal allotment) to five. The variation in utilization from one classroom to the next and from one machine to the other within the same classroom is quite large during any one week. One classroom had a utilization of 580 cards on one machine and 846 on the other. Conclusions and implications of these data were reported to project staff.
9. To what extent can the scores of second-graders on the California Reading Test and	Kalihi-Uka and Makaha, (a field and a pilot school) were selected for this study. All current sixth-grade students in each school (134 total) who had completed the sixth	Shown below are the mean and standard deviation on all variables.

SUMMARY OF SELECTED FORMATIVE EVALUATION STUDIES

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
other tests be used to predict their success on the reading section of the sixth-grade Sequential Test of Educational Progress (STEP)? If the CRT is a good predictor of sixth-grade STEP, it may give the planners some indication of how children in the HEP program might do by the time they become sixth-graders although it is recognized that the same scores on the CRT for HEP and non-HEP students do not mean the same thing.	grade STEP reading test and had also taken the second-grade California Reading Test (CRT), and California Test of Mental Maturity (CTMM) were used. Other data collected were the children's sex and socio-economic status (SES) using Hollingshead's "Two Factor Scale of Social Index." The stepwise regression program revised June 1969 was used to give the best set of predictors of sixth-grade reading performance on the STEP test. The STEP scores are shown as converted raw scores, sex as 1 for male and 2 for female, CTMM in raw score form, SES as the raw score on a scale of 11 to 77 (with 77 as the lowest score), and CRT in percentile form, since raw scores were not recorded in one school.	

VARIABLE	MEAN	STANDARD DEVIATION
STEP	248.2	14.8
SEX	1.4	.5
CTMM	65.1	12.4
SES	50.4	23.6
CRT	44.5	21.3

The intercorrelations are:

	STEP	SEX	CTMM	SES	CRT
STEP	1.00	.32	.63	-.20	.76
SEX		1.00	.09	-.14	.30
CTMM			1.00	-.13	.69
SES				1.00	-.15
CRT					1.00

SUMMARY OF SELECTED FORMATIVE EVALUATION STUDIES

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
		The best single predictor of sixth-grade STEP reading scores was the second-grade CRT. This correlation of .76 was increased only marginally by adding CTMM (R=.77), then sex (R=.78), and SES (R=.79). Thus CRT, which correlated .76 with STEP and had a standard error of estimate of 9.65, is a good predictor of STEP reading scores.
10. How long does it take children to complete selected Language Skills components? Since the mastery levels are established in advance for each component, the length of time children take to complete a component becomes an important variable.	Time for completion of components was defined in two ways and resulted in two different methodologies. One definition considered the actual number of minutes a child worked on a component before completing it. Two time clocks were rented on a trial basis during May for a sampled HEP classroom at the University Laboratory School and another at Kalihi-uka. Students were provided with specially printed program cards and were asked to punch in and out each time they began and ended work on a particular component. The second definition of time was the number of school days between a child's entering a component and completing it. Data were taken from the teachers' classroom records from 11 classrooms at Kalihi-Uka and four classrooms at Makaha. The	The use of a time clock for experimental purposes with primary grade children proved interesting. For the first several weeks children were artificially motivated by the use of a time clock and would start and stop work on a component three or four times an hour in order to be able to punch the time clock. Several mechanical problems were also encountered. The biggest problem, however, was that children would rather frequently forget to punch at the start or end of using a component. Therefore, over half of the cards collected were discarded and only those considered reliable were used. Estimated working time to complete various components was: RWC 1 or 2, 75 minutes; RWC 14, 15, or 16, 80 minutes; CC 2, 50 minutes; Instructional Library (per level), 150 minutes; spelling books, 150 minutes each; DM 1-5, 20 minutes; typewriting BL 2, 85 minutes.

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS

program symbols and their meanings are: YN1 = a large letter discrimination program; YN3 = word discrimination program; BL = recognition of all large letters; RWC1 = read on sight over 30 words; RWC8 = read over 240 words; Ins.1 = read over 3 books; Ins.10 = read over 50 books; CW SL2 = a small letter cursive writing program; CW LC4 = letter connection program in cursive writing; BL = the typing of all large letters; SL2 = the typing of small letters; LDM5 = the first 5 units of a listening program for dialect-speaking children; LM1C1 = the first listening program involving performance of tasks given orally.

Based upon the second definition of completion time, the mean and range for selected language skills components are:

Component	Average Days	Range	Number of Students Monitored
READING			
1. YN-1	4	1-20	64
2. YN-3	12	1-81	94
3. BL	31	1-135	91
4. RWC-1	14	1-88	96
5. RWC-8	9	1-45	64
6. Ins. 1	22	1-99	52
7. Ins. 10	5	1-19	26
WRITING			
8. CW SL2	31	1-100	89
9. CW LC4	19	1-134	66
TYPING			
10. BL	34	3-128	68
11. SL-2	41	1-89	33
LISTENING/SPEAKING			
12. LDM 5	46	1-119	43
13. LM1C1	59	26-94	5

EVALUATION QUESTION AND RELATED DECISION	PROCEDURES	FINDINGS
11. Is the film loop (FL) mode, laminated book (LB) mode, or combined mode most effective in teaching kindergarten and first-grade children to copy single digit numbers and small letters? Both modes are currently being used in the program.	A two-page handwriting test booklet was prepared and administered to all kindergarten and first-grade children in nine classrooms at Kalihi-Uka. Two classrooms had been randomly sampled to have only film loops, five had only laminated writing books, and two had both modes. The test measured children's ability to copy accurately single digit numbers and small letters from a model. All numbers and letters were scored only as legible or illegible in order to provide uniformity of grading.	The average percentage of correct student respons in copying single digit numbers from a model is shown below by grade level. Grade Level / FL only / LB only / both FL and LB K / 75% / 57% / 57% 1 / 80% / 94% / 86% The average percentage of correct student respons in copying small letters from a model is: Grade Level / FL only / LB only / both FL and LB K / 32% / 31% / 24% 1 / 77% / 83% / 88% Although first-grade children performed significantly better than kindergarten children, neither mode nor the combination of modes caused significantly better performance. Teachers have testified, however, that in classes having both modes some children having difficulty with the book mode were helped by the FL mode.

APPENDIX B

LIST OF PRODUCTS AND DEVELOPERS

The following is a list of products for which Product Development Reports will be prepared.

1. Arithmetic Proficiency Training Program (APTP)
   Developer: Science Research Associates

2. CLG Drug Education Program
   Developer: Creative Learning Group
   Cambridge, Massachusetts

3. Cluster Concept Program
   Developer: Dr. Donald Maley and Dr. Walter Mietus
   University of Maryland

4. Developmental Economic Education Program (DEEP)
   Developer: Joint Council on Economic Education

5. DISTAR
   Developer: Siegfried Engelmann & Associates

6. Facilitating Inquiry in the Classroom
   Developer: Northwest Regional Educational
   Laboratory

7. First Year Communication Skills Program
   Developer: Southwest Regional Laboratory for
   Educational Research & Development

8. Frostig Perceptual-Motor Skills Program
   Developer: Dr. Marianne Frostig

9. Hawaii English Program
   Developer: Hawaii State Department of Education
   and the University of Hawaii

10. Holt Social Studies Curriculum
    Developer: Dr. Edwin Fenton
    Carnegie Education Center
    Carnegie-Mellon University

11. Individually Prescribed Instruction--Math
    Developer: Learning Research and Development Center,
    University of Pittsburgh

12. Intermediate Science Curriculum Study
    Developer: Florida State University
    Dr. Ernest Burkman

13. MATCH--Materials and Activities for Teachers and Children
    Developer: The Children's Museum
    Boston, Massachusetts

14. Project PLAN
    Developer: Dr. John C. Flanagan and
    American Institutes for Research

15. Science: A Process Approach
    Developer: American Association for the Advancement
    of Science, Commission on Science Education

16. Science Curriculum Improvement Study
    Developer: Dr. Robert Karplus, Director
    University of California, Berkeley

17. Sesame Street
    Developer: Children's Television Workshop

18. Sullivan Reading Program
    Developer: Dr. M. L. Sullivan

19. Taba Curriculum Development Project
    Developer: San Francisco State College

20. Talking Typewriter
    Developer: Omar K. Moore and Responsive Environments
    Corporation

21. Variable Modular Scheduling
    Developer: Stanford University and Educational
    Coordinates